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THE IMPORTANCE OF A LOW PROTEIN DIET IN CHRONIC NEPHRITIS*

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In planning a diet for chronic nephritis three cardinal principles must determine our selection of food.

First, the amount of protein food must be limited. Since the power of the kidneys to eliminate nitrogenous material is impaired, the amount of such material ingested must be limited to what the kidneys can readily take care of. This necessitates the careful regulation and limitation of the amount of protein food ingested.

Second, a sufficient amount of nutrition must be furnished. Notwithstanding the limitation of protein food, it is essential that sufficient nutriment should be supplied for all needs of the organism. The diet must have a sufficient caloric value, and the loss from limitation of the protein food must be made up by a corresponding increase of the fats and carbohydrates. The caloric value of the diet is of less importance in the more acute stages of acute nephritis, or in acute exacerbations of chronic nephritis. Here, as in all acute diseases, no harm results if the diet for a number of days has a caloric value considerably less than is demanded by the needs of the organism. But in dealing with a chronic condition which may last for months or years, a sufficient number of calories must be furnished or else the body deteriorates from slow starvation.

Third, variety must be provided. No matter how satisfactory a given diet may be, it cannot be strictly maintained for a long time without the patient becoming so tired of it that he rebels. In a diet for a chronic disease, variety is absolutely essential. It must be provided wisely, or the patient will himself vary his diet, and will probably do so foolishly.

LIMITATIONS OF PROTEIN FOOD

It is safe to say that an average adult in health does not need more than 90 gm. of protein in his food daily. It is known from the investigations of Chittenden and others that a person leading an active life can get along and maintain a condition of health and strength over prolonged periods on about half that amount of protein.

For practical purposes I have taken 90 gm. of protein a day as the maximum for cases of chronic nephritis, above which it is unnecessary to go, and have taken 50 gm. as the minimum, below which it is undesirable to go. These are not absolute limits, for I have had patients in a quiescent stage of chronic interstitial nephritis who exceeded 90 gm. without apparent injury. On the other hand in some advanced cases the patients have done well on less than 50 gm. of protein in a day over long periods.

Practically, then, in the severer or advanced cases of chronic nephritis we limit the ingestion of protein to 50 gm. daily. In proportion as the case is less severe we allow more protein, taking 90 gm. as the maximum for the slight or inactive stages of the disease.

CALORIC VALUE OF THE DIET

As has been already stated, the diet in a chronic disease must provide a sufficient number of calories to meet the requirements of the system for heat, energy, etc. Roughly speaking, an average adult needs 2,000 calories in twenty-four hours if at rest (as a patient in bed), 2,500 calories for light activity, and 3,000 calories for moderate activity. Three thousand calories may be taken as the maximum, for in few cases of chronic nephritis are the patients warranted in doing an amount of work that requires more than that.

It will be found practically that individuals differ considerably in their demands in this respect. For example, I have had a number of patients who have been going about and leading a life of light activity, yet maintaining their weight, strength, and general condition of health on 1,500 to 2,000 calories. It is a mistake to force such patients against their inclination to take 2,500 calories or more, simply because it seems to be demanded on theoretical grounds. The maintenance of the weight, strength, and the general condition is a satisfactory practical test of the efficiency of the diet.

Loss of strength and energy and a marked feeling of lassitude are symptoms frequently complained of by these patients. This arises in part from insufficient nutrition, when the patient has a distaste for food, but also in many cases from the ingestion of too much protein in the food. For the waste products of protein metabolism, which the kidneys fail to eliminate, are largely the cause of these sensations and also of the extreme nervousness that is often present. It is extremely gratifying to see these symptoms diminish and disappear when, through the limitation of the protein food, the kidneys can remove the accumulations of waste material of this sort. The loss of appetite also seems to be caused by the excess of this waste material, for with its removal the appetite returns.

We often find patients going through cycles of alternating anorexia and good appetite. It is Nature's attempt to regulate the protein intake. When there is an excess of the waste products from protein food, anorexia ensues and the supply is cut down. When the

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excess has been removed, the appetite returns, often whetted by the resulting lack of nourishment. But unless the diet is properly proportioned, an excess of protein is quickly taken, and anorexia again ensues. This process is sometimes exaggerated through the belief on the part of the patient or physician that the feeling of weakness is to be combated by meat, eggs and milk, because of their reputed strength-giving properties.

An increase in the amounts of these foods, relatively rich in protein, simply makes the condition worse instead of better, whereas most gratifying results are often obtained by diminishing the amount of protein ingested, provided sufficient energy is furnished by the other foodstuffs (fats and carbohydrates).

I may allude in passing to the danger in these cases of the fad of the free use of soured milk. If soured milk replaces other protein food, no harm is done. If, because the patient dislikes soured milk, less protein is taken, a distinct benefit may result. But I have seen distinct harm from the addition to a diet already rich in protein of a pint to a pint and a half of soured milk, representing an addition of 20 or 30 gm. of protein a day.

INADVISABILITY OF THE MILK DIET

It was formerly taught that the ideal diet for nephritis, chronic as well as acute, was a strictly milk diet. If other things were allowed in cases of chronic nephritis, it was not because they were considered more desirable, but because it was found practically that the patients would not adhere strictly to this diet for months at a time. Many physicians to-day are trying their best to keep patients with chronic nephritis as close as possible to a strict milk diet. Von Noorden was one of the first to point out a few years ago the fallacy of this line of treatment.

The objection to the exclusive milk diet lies in the fact that, if sufficient nutriment is to be supplied, an excess of protein must be given, whereas the protein should be diminished in order to spare the kidneys. This is easily demonstrated. Each 100 c.c. of milk contains approximately 4 gm. of protein and furnishes about 70 calories. Let us take 2,100 calories as a convenient number to represent the caloric need of an average patient. As each 100 c.c. furnishes 70 calories, it will require 30 times 100 or 3,000 c.c. to furnish 2,100 calories. In this there will be 30 times 4 gm. of protein, or 120 gm. It has been shown that 90 gm. is the maximum, above which we should not go; therefore, if enough milk is given to furnish a proper amount of nourishment, at least one-third more protein must be given than the maximum amount allowed under the most favorable conditions.

PROTEIN QUOTIENT

It is evident that an article of food is desirable in chronic nephritis according as it furnishes a large number of calories, and yet contains a small number of grams of protein, provided, of course, that it is easily digested and assimilated, and is acceptable to the patient.

I have found it convenient to classify the foods containing protein on this principle. I have used the word "protein quotient" to represent the number of calories furnished by a food for every gram of protein it contains. The protein quotient is the quotient obtained by dividing the calories furnished in a given amount by the number of grams of protein it contains. For example, since 100 c.c. of milk contain 4 gm. of protein and furnish 70 calories, therefore the protein quotient for milk is 70 divided by 4, or 17½, indicating that 17½ calories are obtained for every gram of protein in milk.

We may speak of the protein quotient of a diet. For example, if a diet contains only 50 gm. of protein yet furnishes 2,000 calories, its protein quotient is 40. Or if 90 gm. of protein is allowed for 2,000 calories the protein quotient would be 22 2/9. In chronic nephritis, then, the protein quotient will range from 22 to 40, and the more severe the case the higher should the protein quotient be.

Table 1 gives a list of the common articles of food arranged according to their protein quotients.

TABLE 1.—COMMON ARTICLES OF FOOD ARRANGED ACCORDING TO THEIR PROTEIN QUOTIENT

Cream (30%)	85.7	Fat ham	33⅓
Bacon	60.9	Mutton and pork	23⅓
Cake	58.0	Custard	20.0
Cream (20%)	57.0	Baked beans	18.0
Mashed potato	55.0	MILK	17½
Rice (boiled)	50.0	Soup (purée)	16⅔
Chocolate	46.0	Butter beans	16.0
Potato	45.0	Cheese (full cream)	16.0
Pudding (simple)	44.0	Lima beans	15.0
Zwieback	40.0	Green peas	14.0
Crackers	39.0	Buttermilk	13⅓
Shredded Wheat	35.0	"PROTEID PORTION"	12½
Parsnips	35.0	Fat meat	12.5
"CEREAL PORTION"	35.0	Egg	11.5
Green corn	33⅓	Scrambled egg	11.5
Cereal (cooked)	30.0	Fish chowder	11.0
Macaroni (cooked)	30.0	Oysters	8⅓
Bread	28.0	Lean meat	6.0
Gruel (milk)	25.0	Fish	6.0
Cocoa	25.0	Lobster	5.0
Beets, carrots	25.0	Beef juice	5.0
Onions, squash	25.0	White of egg	4.0
"Vegetables"	20.0		

TABLE 2.—COMMON ARTICLES CONTAINING NO PROTEIN

	One Hundred Grams of Food.				Common Measures.			
	P.	F.	C.	Cal.		P.	F.	C. Cal.
Butter	85			800	Pat (⅓ oz.)	9		80
Olive oil	100			900	Tablespoon	15		125
Sugar			100	400	Teaspoon	6		25
Sweet fruits			10	40	One-fourth lb.	12		50

* P, protein; f, fat; c, carbohydrate.

THE NEED OF DIET CHARTS OR TABLES

It is evident that, if these principles are to be applied in arranging the diet of a patient, certain data must be at hand in reference to the composition of different foods and their caloric value. Without these data, scientific regulation of the diet is impossible. This information may be obtained from Atwater and Bryant's tables,[1] or from tables now published in many books on dietetics and in some books on treatment. I presented to the profession a year ago a convenient diet chart,[2] which contained the statistics for the common articles of food, together with a brief summary of the principles of dietetics. The values given in this chart are approximate only, but are sufficiently accurate for practical use. They are taken as the basis of calculations in this paper. The chief value of the chart is its convenience. With such tables a diet containing the proper amount of protein and at the same time furnishing the desired number of calories can be constructed.

VARIETY, PROTEID PORTIONS, CEREAL PORTIONS

It was found that the third requirement was variety, in a diet that is to continue for a long period. The

1. The Chemical Composition of American Food Materials, Bull. 28, U. S. Dept. Agric. Off. Exper. Stations, Wash. (Revised edition).
2. A Practical Diet Chart, Massachusetts Med. Soc., 1909; Boston Med. and Surg. Jour., Sept. 30, 1909, p. 457. These diet charts are now published by W. B. Saunders Co.

problem is to furnish variety and a sufficient amount of nutriment, and yet to regulate the amount of protein and prevent it from exceeding a given amount.

If the percentage of protein in different articles of food is known, it can easily be calculated what amount of each article will furnish a given quantity of protein. From our present point of view, these various amounts of the different articles may be regarded as equivalent one to another, and may be substituted for each other. I have designated these equivalent amounts of food as "portions." For example, milk contains 4 per cent. of protein, eggs 13 per cent., and meat 20 per cent. Therefore 100 gm. of milk would furnish 4 gm. of protein, the same amount of egg 13 gm., and of meat 20 gm. One egg weighs on the average 2 ounces, or 60 gm. Therefore it will contain approximately 8 gm. of protein. It would require 200 gm. (or c.c.) of milk to furnish 8 gm. of protein, but the same amount would be supplied by 40 gm. of meat. Therefore one egg may be regarded as equivalent to 200 c.c. of milk or 40 gm. of meat, and each of these amounts is one "portion." These albuminoid substances, known as proteids, and other similar articles which are relatively rich in protein are conveniently grouped together. Portions in this group are designated as "Proteid Portions," and the unit is 8 gm. of protein, the amount of protein contained in one egg. In a similar way bread contains on the average 9 per cent. of protein, boiled rice 2 per cent., and cooked cereals 2 per cent. It is found that an average slice of bread weighs about 40 gm. and contains about 4 gm. of protein. Two hundred gm. of boiled rice or cooked cereal would furnish the same amount. A number of the staple articles of food are grouped together on this basis of 4 gm. of protein to each portion, and for convenience these are called "Cereal Portions." Each cereal portion, containing 4 gm. of protein, contains half as much protein as the proteid portion, which has 8 gm.

TABLE 3.—PROTEID PORTIONS

Under this head are included the common articles of food that are relatively rich in protein. Each "portion" contains 8 grams of protein—the amount in one egg. Therefore, in calculating the amount of protein in a diet, one portion is equivalent to another. Variety may be secured by substituting one portion for another which has been ordered in a diet.

Each of the following amounts constitutes one proteid portion:

P.	F.	C.	Cal.		
8	5.5	....	80	Egg.	One.
8	8.0	8.0	140	Milk.	One "glass" (200 c.c.). (A tumbler or coffee cup 4/5 full.)
8	1.5	13.0	100	Buttermilk.	One-half pint. (A tumbler or coffee cup *full.*)
8	2.0 to 8.0	....	50 to 100	Meat or fish.	One and one-third oz. (40 grams). One oz. is the amount of meat in the lean part of a lamb chop; or 1 cubic inch of meat or fish. If steak or fish is 1/2 inch thick, surface would be 2x1 inches.
		Varies with amount of fat.			
8	10.0	1.0	120	Cheese.	One oz. (30 grams).
8	6.0	1.0	90	Scrambled egg, or omelette.	One and one-third tablespoons (80 grams).
8	3.0	8.0	90	Fish chowder.	One hundred grams (3 1/3 oz.).
8	5.0	13.0	130	Puree soup.	One-half pint.
8	7.0	16.0	160	Custard.	Four and one-half oz. (a small cup) (130 grams).
8	19.0	29.0	320	Ice cream	Five oz., a small cup, or rather large serving (160 grams).
8	2.0	3.5	65	Oysters.	Eight average-sized (each weighing 10 grams, or 1/3 oz.). (One oyster of this size contains 1 gm. protein.)
				Clams.	Same as oysters, according to size.
8	5.0	5.0	100	Average proteid portion (P. P.).	

TABLE 4.—CEREAL PORTIONS

The articles of food in this table are less rich in protein than those included under the head of proteid portions, but they are staple articles of food and a considerable part of the protein of the food is derived from them. The amount of protein in each cereal portion is 4 grams—the amount is a fairly thick slice of bread. Thus a cereal portion contains half as much protein as a proteid portion. Calculations and substitutes may be made in the same way as with proteid portions.

Each of the following amounts constitutes one cereal portion:

P.	F.	C.	Cal.				
4.0	0.5	24	115	Bread.	One and one-third oz. (40 grams). One slice of an average-sized loaf; 1 tea roll; ½ breakfast roll; 1 muffin.		
4.0	6.0	40	230	Cake.	Average piece 2 oz. (60 grams).		
4.0	4.0	28	165	Crackers.	One and one-third oz. (40 grams). (Weigh different kinds.)		
3.0	0.5	22	100	Shredded Wheat.	One biscuit.		
4.0	5.0	30	175	Pudding.	Simple puddings (bread, rice, Indian, tapioca, cornstarch), one serving, 3½ oz. (100 grams).		
4.0	10.0	38	250	Pie.	Average piece (100 grams).		
4.0	....	40	180	Potato.	Two moderate-sized, 200 grams, 1 potato = ½ C. P.		
4.0	6.0	36	220	Mashed potato.	3 tablespoons.	200 grams.	1 tablespoon = ⅓ C. P.
4.0	....	12	60	Butter beans.	2 tablespoons.	40 grams.	1 tablespoon = ½ C. P.
4.0	....	11	60	Lima beans.	2 tablespoons.	50 grams.	1 tablespoon = ½ C. P.
4.0	....	10	60	Peas.	2 tablespoons.	60 grams.	1 tablespoon = ½ C. P.
4.0	....	27	125	Green corn.	3 tablespoons.	140 grams.	1 tablespoon = ⅓ C. P.
4.0	1.0	24	120	Cereal (cooked).	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	1.0	33	160	Corn Flakes, etc. (dry cereals).	8 tablespoons.	40 grams.	1 tablespoon = ⅛ C. P.
4.0	....	48	200	Rice (boiled).	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	2.0	21	120	Macaroni.	4 tablespoons.	140 grams.	1 tablespoon = ¼ C. P.
4.0	2.0	21	120	Vermicelli.	4 tablespoons.	140 grams.	1 tablespoon = ¼ C. P.
4.0	....	30	140	Parsnips.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Carrots.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Squash.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Turnips.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	....	20	100	Onions.	4 tablespoons.	200 grams.	1 tablespoon = ¼ C. P.
4.0	1.0	30	140	Average cereal portion (C. P.).			

Table 3 gives a list of proteid portions, and Table 4 gives a list of cereal portions. In these two tables are included all the more common articles of a mixed diet, and from them sufficient variety may be obtained to satisfy any reasonable person.

The regulation of the amount of protein ingested is easy by means of these portions. We can order a certain number of proteid portions (P.P.) and a certain number of cereal portions (C.P.) and know with sufficient accuracy just how much protein the patient gets, although he may be given free choice of all the articles in these lists. For example, if it is desired to give the patient 60 gm. of protein in a day, 4 P.P. (4×8=32)

and 7 C.P. (7×4=28) can be ordered; or 5 P.P. (5×8=40) and 5 C.P. (5×4=20). If the patient is ordered 5 P.P., he might take 2 eggs, one glass of milk, and 2 lamb chops; or one egg, one portion (40 gm.) of fish, 80 gm. of meat, and a cup of custard; or any other combination to make up 5 P.P.; yet from these 5 P.P. he will always get 40 gm. of protein. From the 5 C.P. he will get 20 gm., and the total will always be 60 gm., whatever the combination.

Variety and the regulation of the amount of protein, having thus been provided for, it must next be considered how this scheme affects the problem of the amount of nutrition—the total calories for the day. For, although each portion contains the same amount of protein, the number of calories varies considerably. For example, 1 P.P. of lean meat furnishes only 50 calories, while 1 P.P. of ice-cream furnishes 320 calories; or 1 C.P. of butter beans furnishes 60 calories, while 1 C.P. of cake gives 230 calories. These seem wide variations, but when a person is changing the diet rather frequently he comes pretty near the average figures given in the tables. Sufficient accuracy will therefore be attained by counting each proteid portion as 100 calories and each cereal portion as 140 calories.

THE METHOD OF PLANNING A DIET

The number of grams of protein that the patient should have must first be determined according to the severity of the case. Then the number of calories the diet should furnish must be decided. This is determined by a consideration of the normal weight of the patient and the amount of his activity.

An adult requires in twenty-four hours:

At rest .....14-16 calories per pound of normal weight.
At light work.....16-18 calories per pound of normal weight.
At moderate work.18-20 calories per pound of normal weight.

Roughly stated, an average-sized man requires:

At rest ..... 2,000 calories in 24 hours.
At light work ..... 2,500 calories in 24 hours.
At moderate work ..... 3,000 calories in 24 hours.

Let us suppose, for example, that it is desired to prescribe a diet which contains 70 gm. of protein and furnishes 2,000 calories. It is desirable to prescribe a certain amount of cream in such a diet, both because it is an acceptable article of food and because of its high caloric value and relatively low amount of protein.

	P.	F.	C.	Cal.
Cream, 20 per cent., 1 oz.....	1	6	1	60.
Cream, 30 per cent., 1 oz.....	1	9	1	90.

Each ounce of cream contains 1 gm. of protein. A patient can readily take from 2 to 6 or 8 ounces of cream daily.

In planning a diet for a given number of grams of protein, the first number lower that is divisible by four is selected. This number of grams, being a multiple of four, can be provided for from the proteid portions and cereal portions. The number of grams above this is furnished by cream, each ounce of cream furnishing 1 gm. All the protein has now been provided for and no more can be added. The number of calories which have already been furnished are calculated and then the balance is provided for by articles which do not contain protein, such as butter, sugar, fruit, etc. These articles and their composition and caloric values are given in Table 2.

For example, it is desired to get 2,000 calories from a diet containing only 70 gm. of protein. The first number below 70 that is divisible by 4 is 68. Therefore 2 ounces of cream are ordered and the remaining 68 gm. are divided among the proteid and the cereal portions. If 5 P.P. is tried, that furnishes 5 times 8 or 40 gm. of protein, and there are 28 gm. left, which would be provided for by 7 C.P. Now 5 P.P. furnish on the average 500 calories, 7 C.P. furnish 980 calories, and 2 ounces of 20 per cent. cream furnish 120 calories. This provides for 1,600 calories. Since 2,000 calories are wanted and no more protein can be given, 400 calories must be obtained from non-protein foods. One ounce of butter would furnish 240 calories, 250 gm. (half a pound) of sweet fruit would give 100 calories, and 3 teaspoonfuls of sugar would give 75 calories. The total is 415 calories, or 15 calories more than is needed. It is not difficult to calculate such a diet.

This diet is tabulated in Table 5:

TABLE 5.—DIET FURNISHING 2,000 CALORIES WITH 70 GRAMS PROTEIN

	P	F.	C.	Cal.
5 P.P.	40	25	25	500
7 C.P.	28	7	210	980
Cream, 20%, 2 oz.....	2	12	2	120
Butter, 1 oz.....	..	27	...	240
Sweet fruits, 250 gm.....	..	..	25	100
Sugar, 3 teaspoonfuls.....	..	..	18	75
Total	70	71	280	2015

The diet may be varied further by the addition of any of the so-called "fodder-vegetables," which include asparagus, string beans, Brussels sprouts, cabbage, cauliflower, celery, cucumbers, greens, lettuce, pumpkin, radish, rhubarb, spinach and tomatoes. These do not in themselves furnish enough protein or nourishment to count. They are, however, acceptable to the taste, they add to the volume of the meal, and they offer a ready method of introducing butter or oil in the diet. They may be taken in such amounts and variety as are desired, provided they are easily digested.

This diet may be reduced to ordinary terms for the patient as follows:

Breakfast.—Fruit, 125 gm. (one-half of a large orange). Cereal, 4 tablespoons (1 c.p.), with 1½ ounces of cream and 1 teaspoonful of sugar. One egg (1 p.p.) on 1 slice of toast (1 c.p.) with 1 pat (⅓ oz.) butter. Coffee, with ½ ounce cream and 1 teaspoonful sugar.

Lunch.—Scrambled egg, 80 gm., 1⅓ tablespoons (1 p.p.). Toast, 1 slice (1c.p.) with 1 pat butter. Cake, 60 gm., average piece (1 c.p.). Fruit, 125 gm.

Dinner.—Oysters, 4 average-sized (½ p.p.). Purée soup, 4 ounces (½ p.p.). Fish, 40 gm. (1 p.p.). Meat, 40 gm. (1 p.p.). Bread, 1 slice (1 c.p.), butter, 1 pat. Potato, 1 moderate-sized (½ c.p.). Boiled rice, 2 tablespoons (½ c.p.). Spinach (or other fodder vegetables). Pudding, 100 gm., 1 serving (1 c.p.). Coffee, demi-tasse, with 1 teaspoonful of sugar.

With such a diet planned, the patient is instructed that wherever a proteid portion or a cereal portion is indicated, any other equivalent portion from the list may be substituted. Moreover, if at one meal he does not care for the full allowance, any article omitted or its equivalent may be taken at another meal. The patient may, if he desires, take more fruit, butter, sugar, or other non-protein food than is ordered.

Such a menu gives a patient a diet that is sufficient in amount and nutritive value, is satisfactory in variety to most people, is easy to obtain at an ordinary home table or at a hotel, and can be varied by the patient to

suit his taste; and yet with all the changes the patient is getting a well-balanced ration and his protein intake is strictly regulated.

I find that patients are able to understand these regulations without much difficulty, although the patient should be kept under rather close supervision until the ideas are thoroughly understood. Later the patient should make a report at stated intervals as to just what he has taken in twenty-four hours. In this way a case may be followed and controlled indefinitely.

Where accuracy is important the food should be actually weighed. It is a good plan to do this at the start in any important case. After weighing the different kinds of food for a time the portions can be estimated with sufficient accuracy by the eye. For the purpose of weighing food at the table I have found the food scales designed by Dr. Hart extremely satisfactory.[3]

RESULTS

What can be accomplished by such regulation of the diet?

Much will depend on the stage of advancement of the disease and on its activity. The treatment is prophylactic and palliative rather than curative. Naturally the best results are obtained in cases in which the functions of the kidneys are but little impaired, in the early or inactive stages of the disease. But surprisingly good results have been obtained in some cases of cardiorenal disease, so advanced that we should ordinarily despair of helping them.

When the protein metabolism can be adjusted relief from those symptoms which are due to failure to eliminate these waste products is obtained, and a condition of relative health is restored. The relief from nervous symptoms, anorexia, and the feeling of lassitude or fatigue has already been mentioned. Perhaps the most gratifying result, however, is the lowering of blood-pressure and the consequent relief of the burden thrown on the heart. It would appear that the increased blood-pressure in case of chronic nephritis is due, in part at least, to the excess of these waste products in the body. Such a reduction of blood-pressure cannot be secured in every case, but a gratifying reduction occurs in a large majority, and a surprising drop in many. Blood-pressures ranging from 200 to 180 mm. are commonly reduced below 160, not infrequently to 150 or 140.

One of my patients over 60 years old, starting with a blood-pressure of 190, finally reached and maintained for months a pressure ranging from 120 to 130. He enjoyed better health and strength than at any time since the symptoms arose two years before, but he died recently from an intercurrent disease, being unable to resist successfully an acute infection which resulted in pleurisy and pericarditis. I am confident that his life by regulation of the diet was prolonged fully two years longer than it would have been otherwise. I can see no reason why he should not have lived for an indefinite period longer but for this intercurrent affection.

Another patient was taken in charge a year and a half ago, after the second severe attack of uremic convulsions occurring within three months. He has been free from uremic attacks since then; he is in better health than for a number of years, and his blood-pressure for the past year has shown an average of 160, although it was 210 when treatment began.

In another case of advanced interstitial nephritis with failing cardiac compensation the blood-pressure was reduced from 260 to 180, although the patient had had symptoms for two years and marked symptoms for several months. In this case, however, the improvement lasted but two months, although during that time the patient was practically free from symptoms. Then the former symptoms recurred, with an increase of blood-pressure, so that in two months more it had again reached 260. The patient lived only about two months after that. Surely this was a very advanced case, yet great relief ensued for a time.

Such results cannot be secured in all cases, of course; nevertheless, they are exceptional rather in the degree of reduction of blood-pressure than in the fact that a satisfactory result was obtained. I have had a good result now in so many cases in which I hardly dared hope for it, that I am beginning to predict relief in almost every case. Contrast such results with the transient and unsatisfactory results of drug treatment, and I think you will agree that it is well worth while to take the moderate amount of trouble involved in the proper regulation of the diet.

The stumbling-block in the past has not been the absence of sufficient knowledge, for the scientific laboratory workers have known the underlying facts for years, but the difficulty of getting that knowledge into a form simple enough to enable the physician to apply it in every-day practice. This difficulty is overcome, at least in large measure, by the charts and tables here mentioned.

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ABSTRACT OF DISCUSSION

DR. G. C. SMITH, Boston: I have been interested during the past fifteen years in dietetics in chronic diseases, and the best methods of dealing with chronic affections. There are so few remedies in the way of drugs that can be continued with benefit for a long time, that it is necessary to get at these troubles in some other way, and the dietetic way seems to be the one indicated. The first instruction in New England given on the subject of dietetics has been given by Dr. Arnold. It is really a misfortune that every institution teaching medicine in this country does not have a definite chair of dietetics. It seems to me that this is too large a subject for a man who is teaching another subject to give instruction on. For the past two or three years, however, there has been an improvement in the manner in which the young physician in New England handles the chronic cases, dietetically speaking. Our experience has been somewhat different from Dr. Arnold's in some respects. The question of calories which enters into any diet can be modified very much, as explained by Dr. Arnold in his tables. In other words, in the cases that are primarily renal, the patients as a rule are very thin, usually cold and anemic. In such patients, the carbohydrates and fats must predominate in the diet. On the other hand, in the cardiorenal cases we often find the reverse. In these cases frequently the cardiac part is primary and the interstitial changes or process in the liver, the kidneys and elsewhere are secondary and consequent upon the prolonged congestion of these organs. Such a prolonged congestion, with the long duration of the disease, produces changes in metabolism which weaken the patient, making him take much less nourishment because he suffers with indigestion. The nourishment too may be of the wrong kind, *e. g.:* One may cut out the proteid and increase the "pap," and especially the sweets and bread with their high percentage of starches. By doing this and adding cream and butter the calories are much increased. Such patients are unable to take much exercise because of the cardiorenal disease; therefore, they remain in the house and at rest. A reduction in the number of calories in such cases should be made by

3. Hart, T. S.: A New Food Scale, THE JOURNAL A. M. A., Aug. 7, 1909, p. 457

reducing the amount of fat and carbohydrates. Then the question of the proteid element comes up. There is no doubt in this class of cases but that the proteid element must be higher than seventy grams; one cannot produce an improvement in metabolism without more proteid; hence we must give it to furnish the best nutrition for the cells of the body. Consequently in all these cardiorenal cases it will be found advisable to raise the amount of proteids higher than physicians as a rule recommend. This may be considered a little off from the subject of the paper, but it is such a common thing to find the renal and cardiac cases mixed that it is well to consider them.

DR. PHILIP S. ROY, Washington, D. C.: I have used Dr. Arnold's charts regularly. As to the question of fats and carbohydrates overloading the system and the metabolism becoming deranged as a consequence thereof, as mentioned by Dr. Smith, I have not found that the case if Dr. Arnold's plan be followed. When one wishes to lessen the number of carbohydrate calories, he can replace these calories with fat. Three pints of milk with a pint of cream and one ounce of butter equals about 2,000 calories. This will give all the energy needed. I am in accord with the statement that the proteids in disease of the kidney should not be above 50 grams daily.

DR. H. D. ARNOLD, Boston: I am glad that Dr. Smith mentioned the cardiorenal cases in which the cardiac end predominates. The problem here is somewhat different, in that the power of the kidneys to eliminate nitrogenous material is less seriously impaired. Greater liberality in the use of protein food may be allowed, yet even in these cases there is no necessity for large amounts. I think that 50 grams of protein are enough for the purposes of tissue building, including the heart. It is of great importance that there should be an abundant amount of nutrition—a sufficiently high caloric value to the diet—but beyond the amount of protein needed for tissue-building, this nutriment is just as well, if not better, derived from the other foodstuffs. Often, however, our plan must be modified because of questions of digestion and assimilation. Some people cannot digest fats well, and others have difficulty with the carbohydrates. I would not be understood as maintaining that we must always give the number of calories which are indicated by theoretical calculations. Often we find a patient will maintain weight and strength, and may even gain, on 1,500 calories when 2,000 or more are demanded theoretically. If such is the case it is a mistake to force the patient to take the larger amount.

The only credit I feel that I am entitled to in this work is in getting our knowledge in dietetics into a simple, practical form for application in ordinary practice. There is nothing in it that is new or that has not been utilized by the laboratory workers in metabolism experiments for years. But the data have been too complicated for use in ordinary cases and have not been easily available. If we can apply these principles to ordinary patients we shall plan diets with far more intelligence than we have done in the past.

Health and Sanitation in Cuba.—Reporting the result of an inspection trip over the Island of Cuba (*Sanidad y Beneficencia*, April, 1910, p. 305), Dr. Manuel Varona Suarez, Secretary of Health and Charities, says that there did not exist a single case of quarantinable disease with the exception of leprosy, and that his country was on a level with the healthiest communities in the world. He also asserts that should such a disease enter the country the efficient sanitary organization of the island would be able to ward off the threatening danger. He feels that the national health department is efficient, but regrets that he cannot say as much for the sanitary service in the municipalities, for he found with a few exceptions that vaccination was neglected, that the public slaughter-houses were in a shameful condition, and that the cemeteries were almost as much neglected. Two great obstacles to efficient sanitation were lack of water-supplies and sewerage systems. His inspection convinced him of the urgent necessity of establishing dispensaries and sanatoriums at appropriate sites in the various provinces and of founding hospitals and special wards for the care of the large consumptive population which lacks resources to protect itself against the disease and which constitutes the chief factor in its propagation.

APPENDICITIS IN CHILDHOOD

WITH A REPORT OF 500 CASES *

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This paper is based on an analysis of 500 cases in which I operated at the Children's Hospital of the Mary J. Drexel Home, and on a review of the more recent literature.

Appendicitis in childhood, characterized as it is by subtle and insidious onset, rapid progress and obscurity of symptoms, is a disease of the most profound importance, and it well merits more attention and study than has hitherto been bestowed on it.

The earliest case of appendicitis was reported by Dixon,[1] and occurred in a baby, aged 24 days, which was premature at the eighth month. The appendix was gangrenous and formed, with part of the cecum and ileum, the contents of a sac of a strangulated inguinal hernia. Since the appendix was adherent to the sac, Dixon held it responsible for the descent of the ileum and cecum. A very similar case is reported by Lilienthal.[2] Other cases of infantile appendicitis are reported by Bamberg,[3] in a child, aged 5 weeks; by Dennis and Goyens, in two infants, aged 6 weeks, and by Blumer and Shaw, in one, aged 7 weeks. Berkholz[4] reports four cases in infants, aged 12, 15, 17 and 19 months, respectively, while Schellong[5] met a case in an infant, aged 21 months. Alsberg[6] gives as his youngest patient a baby, aged 6 months, while Springer[7] has seen none younger than 3 years. My youngest patient was 21 months old. Mayet (cited by Springer) collected reports of nine cases of appendicitis in infants. In 1,000 cases McCosh[8] found 1.7 per cent. in children up to 5 years of age. My statistics, however, place the frequency in the first five years at about 8 per cent. This frequency in the first five years of life will probably be diminished under more refined diagnoses. Churchmann[9] thinks that infantile appendicitis deserves separate consideration from that occurring later in childhood, stating, with much truth, that the surgical problem of infantile appendicitis is that of diagnosis, and that the difficulty of diagnosis keeps up the mortality. So, also, von Bramann[10] asserts that the danger of appendicitis is greater in the first years of life than later, and gives a 50 per cent. mortality in all infants under 5 years of age that were present in a series of 117 cases in children. In those from 6 to 10 years of age, inclusive, the frequency jumps from 8 per cent. to 36 per cent., finally reaching 56 per cent. in those between the ages of 11 and 15 years.

As to sex, males predominate. Riedel[11] found that of 1,532 patients 955 were males and 577 females. My series showed 315 males and 185 females.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

* For reasons of space, the table of cases is omitted. It appears in the Transactions of the Section and in the author's reprints.

1. Dixon: Ann. Surg., 1908, xlvii, 57.
2. Lilienthal, Howard: THE JOURNAL A. M. A., Aug. 29, 1908, p. 754.
3. Bamberg: Inaug. Diss., Leipsic, 1905.
4. Berkholz: Monatschr. f. Kinderh., lxxxviii, 133.
5. Schellong: Med. Klin., 1908, iv, 722.
6. Alsberg: Arch. f. Kinderh., 1909, l, 252.
7. Springer: Prag. med. Wchnschr., 1909, xxxiv, 89.
8. McCosh, A. J.: Appendicitis in Children, THE JOURNAL A. M. A., Sept. 24, 1909, p. 853.
9. Churchmann: Bull. Johns Hopkins Hosp., 1909, xx, 31.
10. v. Bramann: Deutsch. med. Wchnschr., 1909, xxxv, 1591.
11. Riedel: München. méd. Wchnschr., 1907, liv, 2305.

The microscopic pathology of acute appendicitis has been carefully studied by Alsberg,[6] who emphasizes the importance of fixing the appendix in 0.8 per cent. formaldehyd solution immediately after its severance from the cecum. The most important changes, of course, are in the mucosa, but the other coats act in sympathy, as the inflammation increases in intensity from the center toward the periphery. In the mucosa the epithelium is desquamated, often eroded and extensively destroyed, and hemorrhages are frequent. The solitary lymph-nodules are enlarged, thickened and studded with polymorphonuclear eosinophils. Alsberg warns against mistaking the exceptionally well-developed nodules of children beyond 2 years of age, especially when cut oblique, for inflammatory changes. The submucosa and sometimes the muscular coat is edematous and the blood and lymph-vessels distended and choked with leukocytes. The serosa is congested and often covered with white fibrin. Ulceration may extend through to the serosa, producing appendicitis granulosa of Riedel, which involves, by predilection, the hip.

In chronic appendicitis also the principal changes are found in the mucosa, in which the epithelium and mucous glands are destroyed and the lymph-nodules atrophied, while contractions may obliterate the entire length of the lumen, or only one part of it. Stenosis near the base of the appendix leads to the formation of hydrops or empyema, and, if near the tip, produces a globular swelling, which, however, causes little or no danger. Adhesions, more or less extensive, may be connected with other organs more remote from the ileocecal region than in adults, because of the greater length of the appendix in children, which compared to that of the large intestine, is, according to Ribbert, 1.1 in new-born children and 1.2 in adults. This circumstance accounts for many mistaken diagnoses, Schellong[5] reporting a case in which the appendix ran transversely behind the bladder to the left and set up a left-sided appendicitis. Riedel[11] states that strictures are relatively rare in children, because a long time is required for their formation. He places their frequency in adults at 26.5 per cent. and in children at 8.7 per cent. Fecal concretions, on the other hand, are relatively common, Springer[7] having found them in 59 per cent. of acute cases and in 20 per cent. of chronic. They are even more frequent than in adults, in the proportion, according to Riedel, of 39 per cent. in children and 27.7 per cent. in adults. The same author states that the worst attacks are associated with suppurating fecal concretions. It is interesting to observe that Low found meconium in the appendix of a 5-month fetus.

Often, the regional lymph-nodules are swollen, indurated and inflamed, and Comby[12] regards them as "witnesses of infectious processes of which appendicitis is the stage." Churchmann[9] states that the pathology of appendicitis in children is distinguished from that of adult life by the tendency to early perforation and the frequency of spreading peritonitis, and Sloan[13] observes that the undeveloped omentum affords less protection against rapidly spreading peritonitis.

The predisposing causes of appendicitis are said to be infectious disease, family disposition, dental caries and mechanical irritation. Of the infectious and contagious diseases, enteric fever, scarlatina, influenza, mumps, pertussis and chicken-pox, have been mentioned. Enteric fever and intestinal catarrh certainly produce congestion of the appendix, which, with superficial loss of epithelium, may prepare the way for infection of the deeper layers. As to scarlatina, Springer states that Ganghofer, in twenty years' experience with scarlet fever, did not observe acute appendicitis in a single instance. Epidemics of influenza often leave in their wake severe acute attacks of appendicitis; certainly, influenza readily affects lymphoid organs. Chicken-pox was more than likely the cause of appendicitis in Schellong's case. The etiologic status of nasopharyngeal troubles, tonsillitis, adenoids, cervical adenopathies and otitis media, is problematic, as the path by which the exciting cause of these conditions reaches the appendix is somewhat obscure, unless it is assumed to be hematogenous. Sloan[13] states that the period of greatest development and activity of the lymphoid tissues corresponds to the period of greatest incidence of appendicitis. Family disposition is emphasized by the French, and may be accounted for by the irregular mode of life among poor families, so that neglect, improper feeding and insufficient medical attention may bring about appendicitis as well in one child of a family as in another.

Jackson[14] presents eleven arguments why dental caries should cause appendicitis, the most striking of which are that infants suffer rarely and that the civilized have both dental caries and appendicitis, while the uncivilized have good teeth, and no appendicitis. Teeth, examined by Alsberg in nine children with appendicitis, were carious, and partly absent in six and normal in three. Mechanical irritation may be caused by errors of diet and foreign bodies. Errors of diet, though undoubtedly responsible for recurrences in adults, are probably only remotely connected with acute appendicitis. Springer has noticed no increase in the frequency of acute appendicitis when the fruit season is at its height. Fecal concretions and other foreign bodies may irritate the appendix enough to permit the entrance of bacteria through epithelial abrasions, but, on the contrary, they may lie dormant for a long time and, not rarely, throughout life. Alsberg found two bits of enamel in an acutely inflamed appendix. To intestinal worms, by their frequency in childhood, might be ascribed a causative rôle. In large numbers (as, for example, 80 oxyuris in an appendix extirpated by Hippius-Levinsohn, cited by Springer) they could block the lumen of the appendix, cause colic, and injure the mucosa superficially by trauma and by the elaboration of toxins. The exciting cause of appendicitis is, of course, bacterial, and usually *Bacillus coli communis*, which is ever alert to invade the walls of the appendix through a *locus minoris resistentiæ* offered by any of the predisposing causes. Other pyogenic organisms may act alone or in conjunction with *B. coli*.

The symptoms of acute appendicitis in infants are unquestionably scanty, irregular and misleading, and it undoubtedly follows that infantile appendicitis is more frequent than is generally believed, or than statistics show. Thus, at autopsy on a 2-weeks-old infant that died of severe acute enteritis, Deiss (cited by Soltmann) found acute appendicitis with serofibrinous peritonitis, without having produced any clinical symptoms, and concludes from this that such findings in infants, even when less severe, are frequent. So, too, Churchmann states that appendicitis of the severest type may exist without one of the classic symptoms, and that even a general peritonitis may develop under observation.

12. Comby: Bull. méd., Paris, 1908, xxi, 535.
13. Sloan: Eclect. Med. Jour., Cincinnati, 1909, lxix, 372
14. Jackson: Australasian Med. Cong. Tr., 1909, i, 1359.

In older children, on the contrary, symptoms reach the other extreme, and acute attacks, even more regularly than in adults, occur suddenly and with very stormy symptoms. There are severe pains which localize about the navel, shortly followed by vomiting, rigidity, more or less extensive, and abdominal distention. The temperature is usually higher than in adults and the pulse more frequent. On the whole, these children give the impression of being seriously ill, lying on their backs with legs drawn up, or curled up on their side, writhing from pain. It must be remembered that the child may be mentally incapable of accurately locating the pain, often pointing to various parts of the abdomen as the place of greatest intensity. Voluntary rigidity is common in children, owing to fear. Hyperpyrexia is an attribute of childhood, and the rapid pulse is due in part to the hyperpyrexia, and in part to the restlessness of the child. Thus, it is evident that the reaction of the whole organism is more active in childhood than later.

In chronic appendicitis the whole organism may be affected by the presence of a chronic focus of infection. The troubles are chiefly digestive. The appetite is capricious and varies from day to day. The tongue is coated and the breath bad. Digestion is slow and dyspepsia marked by flatulence and epigastric swelling after meals. Constipation is habitual and obstinate. Such disturbance may interfere with nutrition even to the extent of emaciation. The face may be thin, pale and sallow, and there may be black circles about the eyes. On the other hand, sufferers from chronic appendicitis may have rosy cheeks and a generally healthy condition. There may be circulatory disturbances, as pallor and blushing of the face, cold hands and feet, and cardiac palpitation and dyspnea on exertion. Secondary anemia, with a murmur at the base of the heart may exist, and fainting may occur. Appendiceal neurasthenia may render children dull and silent and "friends of solitude and repose."

The diagnosis of appendicitis in infancy and childhood should be made easy by the epigram: "All cases of abdominal trouble in children are appendicitis until proved otherwise." With this proviso, there should follow a systematic examination of all organs. In infancy it is unquestionably difficult, yet usually capable of being established. In this solution it must be borne in mind that the younger the child, the more deeply the appendix lies in the pelvis, owing, according to Selter, to the deep position of the cecum in the pelvic fossa. Hence, it is conceivable that bladder symptoms may monopolize the attention of the examiner, there being cloudy urine from edema of the bladder, tenesmus, and even retention from direct irritation of the bladder wall. Many cases have been reported in which urinary symptoms predominated. Churchmann writes that all urinary symptoms in childhood suggest the possibility of appendicitis. For the same reason pelvic abscesses are common, and may simulate abscesses from other causes, so that the same author states that in infants with apparent hip-joint disease, particularly if the thigh be flexed, the same possibility should be kept in mind. It is obvious then that every possible means of reaching in and about the right iliac region must be employed. The simple procedure of catheterizing the bladder may go a long way toward clearing up a doubtful case, and evacuating the phantom pelvic abscess.

By far one of the most important procedures in children is rectal palpation, and this must never be neglected. Churchman states that palpable resistance on the right side by rectal examination is one of the most frequent findings, and Selter calls it absolutely constant. In Schellong's case, the symptoms were characteristic of rectal abscess, including fever, rectal tenesmus and frequent small slimy stools. Rectal examination revealed within half a finger's length an abscess which protruded from above and to the right toward the rectum. Doubtless this rectal palpation has been the sole element of correct diagnosis in numerous cases, including two of my own. Tenderness at McBurney's point, when present, is almost pathognomonic, but the wandering appendices of childhood may carry their tenderness elsewhere. Thus, tenderness may be greater on the left side than on the right, as when the appendix is in the pelvis. Other signs, more applicable to older children, are hyperesthesia of the skin, and the fact that sudden removal of the palpating finger-tips from the point of greatest tenderness is more painful than the finger-tips themselves. Carstens[15] recommends palpatory percussion. Flexion of the right thigh on the abdomen is likewise very suggestive. In chronic appendicitis the organ is more often palpable than in adults, and an analytic study of the symptoms, together with localization of the tenderness at or near McBurney's point, usually establishes the diagnosis.

An appreciation of the difficulties of differential diagnosis may be had only by scanning the various and varying cases reported in the literature. Affections of the thoracic, abdominal and pelvic viscera, as well as of near-by joints, may enviously mimic the peculiar little ways of the appendix. The old question of pneumonia or appendicitis must be cautiously considered, particularly right-sided central pneumonia with but few physical signs. At the onset of right-sided croupous or central pneumonia, pain is often referred to the abdomen, and incriminates the appendix. This abdominal hyperesthesia may disappear by firm manual pressure, and the abdominal walls relax between respirations, which are very rapid. There may be herpes and cyanosis of the lips. In puzzling cases, careful observation usually clears the diagnosis within twenty-four hours. Cholelithiasis is rare in childhood, yet Alsberg mentions a typical gallstone attack in a 3-year-old child, with the passage of gall-stones. Julien[16] reports a case of perforative appendicitis with retrocecal abscess, which was diagnosed as hepatic colic. Pancreatitis, renal colic, and movable kidney are rare in childhood. Intestinal catarrh, especially when accompanied by colic, may seriously cloud the diagnosis because of pain, vomiting, increased abdominal tension, fever and rapid pulse.

Of the intestinal obstructions, intussusception may be distinguished by the tympanites, by paroyxsmal pain, by the discharge of bloody mucus from the anus, and by the late appearance of inflammatory peritoneal reaction, although if seen for the first time in the stage of general peritonitis, differentiation from appendiceal peritonitis is impossible, and in such cases operation is the safest procedure. Intussusception is of importance because of its frequency in childhood. The dense, sausage-shaped tumor, which shifts and varies in size, even to the extent of being reached by rectal palpation, as the intussuscipiens advances, may be helpful in diagnosis. Springer was led to the erroneous diagnosis of perforative appendicitis with peritonitis in a case which autopsy showed to be volvulus, caused by a lymphangioma in the mesentery

15. Carstens: Deutsch. med. Wchnschr., 1909, p. 1592.
16. Julien: Echo méd. du Nord., 1907, xi, 859.

of the small intestine. This case suggests the possibility of a congenital mesenteric cyst, such as I recently[17] reported, likewise being confused with acute appendicitis. In one of my cases, a right ovarian cyst twisted on its pedicle, in a girl aged 12, simulated acute appendicitis. In girls, salpingitis and gonococcic peritonitis must be considered, and the presence of vaginal discharge or vulvovaginitis will be helpful, as well as rectal examination. Tuberculous peritonitis was mimicked by a case of appendicitis reported by Rubritius and Hermann (cited by Springer) from von Jaksch's clinic. Acute cystitis in small children, caused by the colon bacillus, gives rise to fever, pains about the navel and vomiting. Here urinalysis, which often must be made repeatedly, suggests the diagnosis. Chronic appendicitis, by causing adhesions to the bladder, may be confused with cystitis. Lumbar abscess, such as may accompany Pott's disease, was diagnosed by Julien[16] in Case 4 of his series, a girl aged 4 with appendiceal abscess, which was evacuated by lumbar incision. In right-sided hip-joint disease there is absence of inflammatory peritoneal reaction, presence of muscular contracture, and the demonstration of foci of diseased bone. Churchmann reports cases which simulated this as well as vesical calculus, intestinal obstruction, associated with roundworms, and even cerebrospinal meningitis. Diagnosis in cases treated medically must always be uncertain.

The prognosis of acute appendicitis is favorable, if the case is received early, and if the appendix is removed early. If the patient is operated on within the first twenty-four hours, the mortality is practically nil. Beyond this time, in suppurating cases, the mortality rapidly rises and after the third or fourth day is nearly as unfavorable as it was favorable in the early stage. With the flight of time, thinner grows the hair that suspends the sword of Damocles. Moreover, the danger of acute appendicitis is greater in the first two years of life than later. In chronic appendicitis, while there is no immediate danger, yet an acute attack with perforative peritonitis is always to be feared. In fact, as Alsberg expresses it, "A person who has once recovered from an attack of appendicitis sits on a barrel of gunpowder."

As regards the value of the leukocyte count, I agree with Soltmann that the greater the leukocytosis, and the larger the relative percentage of polymorphonuclears, provided the temperature and the pulse are proportionate and not high, the more favorable the prognosis; while the lower the leukocytosis, with lower temperature and more frequent pulse, the more unfavorable and severe the course. He thinks that leukocytes here play a rôle similar to that which they play in the autolysis of the lungs in pneumonia, where a proteolytic ferment exerts a digestive action on the exudate.

The ideal treatment will maintain the mortality at nil. This ideal will be attained only when all patients are operated on early. That early operation is the normal course to pursue is now conceded by the world's surgeons. It is true that more early cases are received than formerly. That is why the mortality is decreasing as the years roll on. But the desideratum is that all patients be received early. I believe that the fault is not so much with the medical profession as with the ignorance and prejudice of parents. How many patients do we receive, sick from three to seven days, with pus-laden abdomens, and the parents beseeching us to operate!

17. Deaver, H C.: Ann. Surg., 1909, xlix, 619.

The time to operate, then, is before the storm breaks, and while the noon-day quiet holds the hill. Twenty-eight of the appendices in my series were ballooned with pus, and on the point of exploding, when removed. Such an organ, like Vesuvius, threatens the entire peritoneal cavity. A unique feature of appendicitis, up to and during this stage, is that the entire area of acute inflammation and phlegmon can be removed with nothing but benefit to the patient. Where else in the body is such a thing possible? Can a digit, the seat of a felon, be amputated with propriety? Can a pyosalpinx be removed with the same disregard for the value of the organ? Can even a surface phlegmon, as a carbuncle, be removed *in toto* in a similarly satisfactory manner? Inconceivable! Here, then, is an organ which, together with the disease that has attacked it, can be ablated without depriving the patient of an organ or tissue of any recognized value.

In cases in which there is a localizing abscess, with diffuse peritonitis, general abdominal tenderness, with more or less distention and bilateral rigidity, moderately high temperature and rapid pulse, with a low leukocyte count and a large percentage of polymorphonuclears, it is best to defer operation. With the ebbing of the tide, there is often revealed a mass stranded on the pelvic shelf, an indication that the omentum and coils of intestine have had time to assemble and form a barrier to the pus. With the evacuation of the abscess, recovery is practically assured. In twenty of my cases I waited from two to twelve days before operating.

Such cases are managed very much the same as cases of acute pyosalpinx. Rest in bed, ice-packs to the abdomen, the Fowler position, gastric lavage, rectal instillations of saline solution and no water, no nourishment by mouth, no purgatives, no opium.

Opium clouds the symptoms and makes the diagnosis more difficult. By favoring tympanites, it interferes with palpation and percussion, and, by diminishing or removing pain, it makes severe cases assume a more benign aspect. It also retards the defensive activities of the leukocytes. Purgatives must be withheld absolutely. This statement cannot be made too strong. The majority of badly progressing cases of appendicitis have been treated with purgatives and the most unfavorable turn often dates directly from the time of their administration. Cases have been reported in which purgatives have produced perforation. As one writer expresses it, "First purgatives, then death." Cathartics must never be given unless it is absolutely certain that appendicitis is absent. By increasing peristalsis, they interfere with the localizing process, and in the presence of perforation, increase fecal extravasation. If spontaneous defecation does not occur after the most acute symptoms have subsided, it may be assisted by small, lightly injected enemas of soap suds or oil, or by suppositories.

I wish it clearly understood that I employ non-operative treatment only in cases with localizing abscess with diffuse peritonitis. To treat early intra-appendiceal appendicitis medically is a hazardous venture; as well might one tie a halter about the little patient's neck. It is like the game of heads I win, tails you lose. Medical treatment should have no more place in the treatment of these early cases than it has in hare-lip or cleft palate. Its mortality is twice that of the operative, and in cases of recovery it is difficult to convince the parents of the

necessity of interval operation. Furthermore, when recurrence does occur, surgical help may not be at hand.

Operation is even more suitable for children than for adults, since their kidneys and cardiovascular system have not suffered through alcohol or age, and hypostatic pneumonia seldom occurs. In suppurative cases the appendix may be removed when it lies free or presents conspicuously in the wall of the abscess. On the other hand, when the abscess is large and the appendix not directly visible, and when its removal necessitates extensive disseverance of adhesions, it should not be disturbed, because of the probably already weakened and exhausted condition of the child, and the chance of diffusing pus over the abdomen. Thus, in twenty-six of my cases, the appendix was not searched for, but was removed subsequently. When pus is already diffused throughout the abdominal cavity, flushing the peritoneum is decidedly contra-indicated. Accessible pus, however, may be mopped away and copious drainage provided through the original incision and through counter incisions. In "clean" cases, I employ a small gridiron incision, since it reduces the chances of a post-operative hernia to a minimum. The stump of the appendix must be carefully disposed of by tucking under, and cecoplication must be so performed that there will be no liability of the sutures yielding, thus permitting reinfection of the peritoneum by the stump. As a routine measure a glass tube should be passed into the pelvic basin to explore for fluid, lest a pelvic collection be overlooked, and this precaution may be rendered doubly effective by rectal examination previous to operation.

The post-operative treatment of appendicitis is highly important. This begins immediately on the patient's removal from the operating table. If drainage has been required, the patient should be propped upright in bed, in the Fowler position. I do not maintain this position for more than thirty-six hours, for fear the intestines, already crowded into the pelvis by gravity, adhere to each other and cause intestinal obstruction. Enteroclysis, I am sure, is most beneficial for pus cases.

Nausea, spitting up, and vomiting after operation, usually yield to the stomach-tube. If these are persistent, however, and if there is a sudden severe pain becoming paroxysmal, intestinal obstruction has developed, as these are the initial symptoms.

The classic symptoms of intestinal obstruction, projectile vomiting, great distention, and retention of feces and gas, must not be permitted to appear, since they bring forlorn hope to the operating-table. These are not the symptoms of intestinal obstruction, but are those of a toxic peritonitis, the result of intestinal obstruction. I found the temperature and pulse to be of but little significance in these cases. When operating, if no definite constricting band is found, and the adhesions are numerous, the best procedure is to establish lateral anastomosis to circumvent the obstructed area. Accordingly, I established ileocolostomy in one of my cases of intestinal obstruction. In two other cases the same procedure was indicated at the primary operation for prophylaxis of the partial obstruction, which was present, becoming complete. In the one, two knuckles of ileum had adhered so as to produce partial obstruction by agglutination, and ileocolostomy was necessary. In the other, enterorrhaphy to close a perforation of the ileum so narrowed the intestine that ileocolostomy was likewise performed. I have prepared a table showing sixteen cases of intestinal obstruction operated on with one death, that of a boy, admitted on the fourth day of his illness, who had developed a frightful peritonitis and, after a plucky fight of eighty-five days, in the course of which he developed bronchopneumonia and subphrenic abscess and endured three operations, finally succumbed to that octopus of surgery, universal abdominal adhesions.

Secondary abscess occurred in twelve of my cases, and was subphrenic in six. Cases showing diffuse peritonitis at operation must be watched carefully throughout the first month of the post-operative period for evidence of this complication. Protracted elevation of temperature, together with high leukocyte count and local signs, usually indicate secondary abscess. Subphrenic abscess fixes the diaphragm, produces rigidity of the overlying muscles, pushes the liver down, causes diaphragmatic pleurisy, and makes the patient profoundly septic. In the series of intestinal obstruction, two secondary abscesses were found, one beneath the diaphragm and the other at the duodeno-jejunal flexure.

The amount of urine must be watched daily after operation, and the stools examined for blood and intestinal parasites. The heart and lungs should be examined daily, and the skin closely watched for prompt diagnosis of the eruptive fevers and the throat for diphtheria. Six of my patients developed contagious diseases during their convalescence.

As regards drainage, I employ it only when the exudate is purulent or in large quantity. I use gauze, with or without a glass or rubber drainage-tube. The objection to drainage, especially with tubes, is that it may cause inflammatory exudate predisposing to intestinal obstruction. Glass tubes are more suitable for the pelvis, but their rigidity is a drawback. One of my patients broke a glass tube in his pelvis. In three others the tube was found, when dressing, to be blocked by a plug of omentum. The glass tube is usually removed within three days, when the exudate becomes clear and small in amount. It is replaced by a rubber tube, which is removed within a week. Rubber tubes are also useful in draining pockets of pus through counter-incisions, and, in conjunction with gauze, for large collections. Gauze drains well for a few hours, but, after that, it is only protective in function and hinders, rather than favors, drainage. Over the drainage I place gauze dressings, wrung out in sterile salt solution, since thus they absorb discharges more readily than a dry dressing.

CONCLUSIONS

1. Appendicitis in childhood occurs with increasing frequency from birth to puberty, and is more common in males.

2. It runs a rapid and severe course in children more often than in adults. There is less tendency to the formation of strictures, but fecal concretions are more often found.

3. Enteric fever, intestinal catarrh and influenza may predispose to appendicitis. Other infectious or contagious diseases and nasopharyngeal troubles are hardly to be considered as etiologic factors.

4. In infants the symptoms of acute appendicitis are often scanty, irregular and misleading. Infantile appendicitis is more frequent than is generally believed, or than statistics. In older children even more regularly than in adults, acute attacks occur suddenly and stormily. Chronic appendicitis represents a focus of chronic autotoxemia, with all its attending evils.

5. All cases of abdominal trouble in children should be regarded as appendicitis until proved otherwise. Differential diagnosis must be made between appendicitis and intestinal catarrh or worms, right-sided pneumonia or sacro-iliac disease, ovarian cyst twisted on its pedicle, mesenteric cysts, cystitis and rectal abscess.

6. The prognosis in acute appendicitis is favorable, if the case is received early and if the appendix is removed early. If the patient is operated on within the first twenty-four hours, the mortality is practically nil. After this time, the prognosis rapidly becomes worse. In chronic appendicitis an acute attack with perforative appendicitis is always to be feared.

7. The result of this ideal in treatment is to maintain the mortality at nil. Early operation is the normal course to pursue.

8. In intra-appendiceal appendicitis the appendix with the entire diseased tissue can be removed with nothing but benefit to the patient.

9. Non-operative treatment is indicated in cases of localizing abscess with diffuse peritonitis. Opium and purgatives are absolutely contra-indicated. Cathartics must never be given unless it is absolutely certain that appendicitis is absent.

10. Operation is even more suitable for children than for adults.

11. Post-operative treatment is highly important. The Fowler position must not be maintained for more than thirty-six hours in drainage cases, lest intestinal obstruction develop.

12. Intestinal obstruction is ushered in by sudden, severe pain, becoming paroxysmal, and by nausea, spitting up and vomiting. Later symptoms arise in consequence of toxic peritonitis, the result of intestinal obstruction. The temperature and pulse are of but little significance in these cases. In the presence of numerous adhesions ileocolostomy is the best procedure.

13. Secondary abscess must be carefully watched for. It is revealed by a rise and continued elevation of temperature, with high leukocyte count and local signs.

14. Contagious diseases must be recognized at once.

15. Drainage is to be employed only when the exudate is purulent or in large quantity. By its presence, it produces adhesions and predisposes to intestinal obstruction. Glass tubes may be broken or plugged by omentum. Rubber tubes are valuable for their pliability. Gauze drains well at first, but later retards drainage. A wet dressing is the best for absorption.

STATISTICS

Number of cases	500
Number of deaths	23
Mortality (per cent.)	4.6

SEX

Males	315
Females	185

AGE

Birth to five years	40
Six to ten years	180
Eleven to fifteen years	280

VARIETY

Acute appendicitis	403
Chronic appendicitis	97

CONDITION OF APPENDIX

Abscess at tip	27
Ulcerated, but not perforated	18
About to perforate	28
Perforated	17
Gangrenous	52
Perforated and gangrenous	91
Kinked or curled	32
Rotated on axis	5
Fecal concretion in appendix	19
Fecal concretion in abscess	7
Oxyuris in appendix	1
Slough of tip	1
Chronic	97
Acute catarrhal	105

CONDITION OF PERITONEUM

Local peritonitis with abscess	243
General peritonitis	12
Diffuse peritonitis	43

LOCATION OF ABSCESS

About appendix	123
Pelvis	65
Liver to pelvis	11
Subhepatic	3
Near navel	1
Near spleen	1
Multiple	39

MISCELLANEOUS PATHOLOGIC CONDITIONS

Gangrene of liver (partial)	1
Gangrene of spleen (one-half)	1
Gangrene of omentum (partial)	1
Gangrene of cecum (single)	3
Gangrene of cecum (multiple)	4
Gangrene of ileum (partial)	1
Ulcer of cecum (subserous)	1
Ecchymosis of cecum (subserous)	1
Cecum adherent to parietes	3
Perforation of ileum	2
Perforation of cecum	3
Uterus didelphys	1
Uterus, retroversion of	1
Ovarian cyst, twisted on pedicle	1

DRAINAGE

Gauze	113
Tube, glass	52
Tube, rubber	24
Gauze and glass tube	91
Gauze and rubber tube	18
Counter-openings	19

COMPLICATIONS

Bronchitis	1
Pneumonia	12
Abscess, secondary	12
Abscess, subphrenic	6
Intestinal obstruction	16
Phlebitis	2
Parotitis	1
Nephritis	1
Uremia	2
Endocarditis, acute	1
Diphtheria	2
Scarlatina	1
Measles	1
Pertussis	1
Enteric fever	1
Erysipelas	1
Melena	2
Hemorrhage, secondary	1
Evisceration from crying	2
Ulcer, decubitus	1

CAUSE OF DEATH

General peritonitis	12
Pneumonia	2
Uremia	2
Abscess, subphrenic	2
Abscess, perisplenic	1
Hemorrhage, secondary	1
Gangrene of spleen	1
Gangrene of ileum	1
Intestinal obstruction	1

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ABSTRACT OF DISCUSSION

DR. L. S. MCMURTRY, Louisville, Ky.: The subject of appendicitis has received such frequent and elaborate consideration in this section from year to year that it is difficult to present any phase of the subject which has not hitherto been discussed. The paper just read, however, brings forward an important and common incidence of this disease which has not had adequate attention. This disease is often overlooked in children, or the diagnosis made too late to obtain the best results from treatment. There are two conditions which render diagnosis exceptionally difficult: First, those anatomic variations found in childhood relating to the position and relations of the caput coli and appendix, developmental in character, detract from the classic local symptoms and are in consequence misleading. Second, in early childhood the patient is unable to lend the coöperation as to subjective symptoms afforded by adults, which is so valuable as a diagnostic aid. And again, the diagnosis is more difficult because in young children palpation is impracticable, especially deep palpation. Gentle rectal examination is a valuable aid to diagnosis, and will often disclose the nature of the disease.

The essayist has properly emphasized the importance of quick work in the operative procedure. The dangers of prolonged

anesthesia and extensive manipulation are increased in operations in children, and hence the greatest expedition should be observed. In a large proportion of suppurative cases the appendix should not be searched for, the surgeon contenting himself with evacuation and drainage for the immediate good result. In a word, Dr. Deaver has advocated the same principles in children that should be applied to adult life, after diagnosis has been established. In my experience intestinal obstruction is more common after operation in children than in adults, and the early recognition of this sequel will do much to prevent a fatal result. The rule in diagnosis set forth by Dr. Deaver is an admirable one, and should be generally adopted, viz., that diagnosis of appendicitis should be assumed in cases of severe abdominal pain accompanied by fever, and, unless proved otherwise, should be treated as appendicitis. And finally, in acute inflammatory disease of the abdomen in children opium should not be given in the early stage of the disease. The use of opium and drastic cathartics is harmful and should be withheld.

DR. EDGAR A. VANDER VEER, Albany, N. Y.: In my experience, based on a study of the cases occurring in the practice of my father and myself, I find that the disease is most general between the ages of ten and twenty. Before the age of ten years the cases are comparatively infrequent and not so easily diagnosed by the attending physician, because of the inability of the child to make known the exact location of the pain. The approach to and the commencement of puberty also seems to have a bearing on the subject, and may to some extent account for the increased number of cases recognized after the age of ten years.. Our youngest case occurred in a boy, three and one-half years old, who was ill only six hours, but from whom a gangrenous appendix was removed. He complained of pain in the stomach, but the diagnosis was made chiefly on the rigidity of the right rectus muscle.

As the author says, a child often comes to the surgeon with a history of having had bilious attacks, and when such a history is given it is wise to entertain the possibility that there have been attacks of appendicitis. In fact, I have operated in several cases in which the only symptom complained of was an indefinite pain in the abdomen, accompanied by a history of the patient having had several bilious attacks, and invariably have found a diseased appendix to be the cause of the trouble. Differential diagnosis between appendicitis and the other conditions mentioned is not very easy, though very important, and can only be determined by a careful weighing of the symptoms.

When we obtain a history of a child having suffered for years from bilious attacks, taken suddenly with vomiting and an acute pain in the abdomen, no matter whether in the right inguinal region or not, but gradually converging to that point, with an increased leukocytosis and with rigidity of the right rectus muscle, without excluding any of the other conditions, we are safe in making a diagnosis of appendicitis.

As to the laboratory as an aid in diagnosis and prognosis, I have not found it of very much value, as the decision must be made by the surgeon on the symptoms presenting at the time he sees the case, not delaying for an elaborate report from the laboratory, which delay might prove fatal in many instances. Of course, the most favorable time for operation is in the first twenty-four hours, when the prognosis is very good indeed; but it is seldom that we see a case under such favorable conditions; it usually runs along anywhere from three to four days to a week. In all these cases I believe in immediate operation, no matter whether the appendix has not as yet ruptured, whether the abscess has formed, or whether there is diffuse peritonitis present. Often in cases in which the patients are in desperate condition I have seen them recover after operation, and in my opinion the prognosis lies not so much in the operation as in the postoperative treatment.

The average practitioner within the past five years has come to recognize the symptoms of appendicitis much earlier than formerly, the result being that cases come to operation much sooner and the danger of resulting complications is greatly lessened, so that the abscess cases and cases of general peritonitis, with their consequent complications, are also greatly lessened in number.

Children, as a rule, react quickly after operation and seem to have more resisting power against infection, etc., than people of middle age.

When we come to look over the entire situation, appendicitis, barring the difficulty of making diagnosis, is no different in children from what it is in adults.

DR. M. M. LUCID, Cortland, N. Y.: Why can we not treat appendicitis as we generally treat other things, strictly on a basis of facts? In other words, why not believe what we see, and strive to be prepared to read the handwriting on the wall—on the inside of the abdominal wall—from external manifestations, and not be misled by irrelevant symptoms? It has been my experience as well as that of several surgeons to operate on patients with acute, progressive appendicitis who were ill in bed with other unassociated ailments.

Much as we have learned about appendicitis, we have yet to learn that we ought to treat it precisely as we treat cancer, that is, as a local disease. To wait for the development of constitutional symptoms, such as elevation of temperature, increased frequency of pulse, with high tension—the development of tympanites, etc., is to trifle with death in defiance of the plainest teaching of experienced surgeons. Our ablest surgeons, whose experience covers many thousand cases, tell us that the actual pathology of the appendix is not reflected by the symptoms of the patient. Why then should the general practitioner presume on a limited degree of good fortune, often mistaken for skill, decide offhand what cases are operable and what inoperable, without recourse to a surgical consultation? Meanwhile let it be admitted that good medical treatment is far preferable to poor surgical treatment.

Appendicitis may occur in any section of the country, at any time, and in any individual. There is but one treatment for a progressive case of appendicitis, namely, operation, not when fulminating peritonitis has developed, but long before the deadly infection has passed beyond control.

Some laymen, and many physicians "dread operations" having in mind operations performed too late and under conditions which they do their best to perpetuate. They do not recommend operation except as a last resort, life or death—unfortunately, such patients usually have both operation and death. We are deeply indebted to Morris, Fowler, Ochsner, Murphy, the Mayos, and a score of others, for their thoroughgoing studies of the treatment of peritonitis. Surgical prophylaxis is the watchword for the early treatment of suppurative peritonitis—just as one fire-proof building is worth a dozen fire engines. It is fair to assume that within a few years, the man who trifles with a case of progressive appendicitis will be classed with the one who applies a greasy nostrum to a mammary cancer.

DR. MAURICE ROSENTHAL, Fort Wayne, Ind.: As has been brought out by the paper, as well as in the discussion, the lack of drainage and the formation of adhesions with consequent intestinal obstruction have contributed to the immediate mortality in these cases. I attribute nearly all my mortality in appendicitis to obstruction and lack of drainage. You can prevent bowel adhesions, at least for some time, by the liberal application of petrolatum. Like paraffin, petrolatum is absorbed very slowly, possibly not at all. By applying it in the area to be drained, I have found that drainage is more prolonged and more profuse, and that the dangers of adhesions and obstructions can be greatly reduced thereby. I have used petrolatum by manual application to a limited area, in a few cases—the last four cases, I think, in which I operated. I got better drainage, more efficient drainage, and more prolonged drainage, and probably averted some of the dangers of adhesions from obstruction.

DR. HERMAN TUHOLSKE, St. Louis: There are without question certain principles thoroughly understood and known which govern the management of appendicitis in children. No one has done so much in this direction as Dr. Ochsner. We have learned considerable about the proper treatment of appendicitis from him. There are some things that are very clear today. Some twenty-odd years ago, when I had a very limited experience in operating for appendicitis, I said: "Make the diagnosis and then operate." I have several times since then changed my opinion, but have always come back to the orig-

inal idea. The point of greatest importance is that a diagnosis of appendicitis should not be based on any one symptom. There is no such thing as a pathognomonic symptom of appendicitis. Pain in the region of the appendix may mean something else. Not long ago a physician made a diagnosis of appendicitis for a man who was traveling in the East and urged immediate operation. The patient returned to St. Louis at once, suffering great pain at the classical point. He asked me to operate for appendicitis. I had him go to bed in the hospital. When I saw him in the morning, there was as beautiful a streak of herpes zoster as I have ever seen, occupying the line of pain. Recovery was prompt.

As to treatment, I believe in operation as soon as the diagnosis is made, unless there is a positive contraindication. In making a diagnosis we must be on our guard, because in the early hours in young children there may be something else brewing. I have seen three cases recently, in which I was called by competent internists to operate, and which occurred in children of five and six years, who within a day developed pneumonia. One of them was rolling around in bed moving his limbs freely. I examined the child and elicited no pain in the abdomen. I asked for ten hour's delay, and at the end of that time the doctor told me the child had an unmistakable attack of pneumonia. First, make a careful diagnosis and then act, but never harbor the idea that appendicitis patients do not die; nor should you operate on the strength of one symptom or a combination of indistinct symptoms.

When you are sure of your diagnosis and the patient is still in fair condition, operate at once. If you wait until pus is forming, then you must follow some other plan of treatment and use your best judgment in selecting the proper time for operation later in the interval. An appendix which has been inflamed must be removed some time.

DR. JOHN B. DEAVER, Philadelphia: We have heard a great deal about race suicide within the last few years from one of our most distinguished citizens, but there is no one thing that contributes so largely to a decreasing population as does sterility, the result of pelvic appendicular peritonitis in young girls and young women.

PERSISTENT PATENCY OF THE DUCTUS ARTERIOSUS

DEGENERATION OF THE CARDIAC MUSCLE AND CORONARY ARTERIES, AND OF THE SINO-AURICULAR BUNDLE, FOLLOWED BY RUPTURE OF THE RIGHT VENTRICLE*

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One of the most interesting problems of physiologists to-day is concerned with the structure and action of the heart. So much experimental work has been done during the past few years on the cardiac muscle, nerves, valves, and blood supply, as well as on the arterial system, by means of measuring apparatus and surgical operations, that any extraordinary case of heart failure which can be studied during life and post-mortem should be made available for future reference, as an addition to our sum-total of knowledge of congenital anomalies, as well as of inflammatory disease.

It is for this reason that I have ventured to make a slight contribution to the literature on congenital cardiac malformation, which in this case was associated with a sequence of disorders of the heart and its valves, resulting in a rare condition of rupture of the right ventricle, and in the patient's death at the age of 26.

In presenting this report I must express my regret that no sphygmographic tracings or electrocardiograms were made from the heart, the arteries, or the veins; but a brief study of the conditions as a whole may not be unprofitable, although a full discussion of such a case would far exceed the limits of this paper.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

REPORT OF CASE

History—The patient was a married woman. Of her early history there is little known; she told me she had always had rheumatism and backache, had suffered frequently from grip, and that her physicians in Berlin, Germany, said she had heart trouble since she was a little girl. Her parents and grandparents were healthy. I first saw her April 3, 1905, and her condition was as follows: Height, about 5 feet, 4 inches; weight, 120 pounds; body, plump; color, good; some acne on face; catarrh of throat and nose; lateral and anterio-posterior curvatures of the spine due to muscular weakness, simulating both scoliosis and kyphosis; aortic pulsation in the abdomen noticeable; heart enlarged 1 cm. to right and left, with a murmuring, noisy systolic murmur heard both at base and apex, extending to right of the sternum and almost to the axilla; lungs normal; bowels distended with gas; diarrheal movements; stomach larger than normal; liver normal; left kidney in left groin; pelvic organs normal; urine normal.

After a summer of rest and hygienic life the cardiac murmurs nearly disappeared, but the patient continued to suffer from backache, diarrhea, and catarrh of the throat. The following year she went through a successful pregnancy in better health than usual, even omitting colds and grip. During the summer of 1907 she had a nervous strain which was followed in the early autumn by a condition of flabby muscles and flabby heart, with loud systolic murmur over the pulmonary artery in the third space, and a strong thrill felt over the third and fourth interspaces at the right of the sternum, and frequent palpitations. Her intestinal indigestion was very troublesome, and the facial acne most annoying. Hygienic treatment, baths, massage, careful diet, and occasional doses of codein gave considerable relief, while digitalis, even in minute doses, caused most uncomfortable bounding and beating of the arteries all over the body.

At the end of December, 1907, I referred the patient to Dr. Thayer of Baltimore, who sent me the following diagnosis:

"There is evidently a congenital malformation, but one which from her history and condition, may well be compatible with a long life. The long machinery murmur over the right ventricle with systolic accentuation, together with the accentuation of the second pulmonic sound, and the rather large right side suggest a septum defect (ventricular). This lesion is also more compatible with long life than most other cardiac defects. A striking feature of this case is the fact that the murmur is so loud at the base and in the first left interspace, and that the accentuation high up is late, a late systolic, almost a diastolic accentuation, but the murmur still continues throughout both cycles of the heart with the heart sounds heard, as it were, superimposed. The loudness of the murmur high up and the change in its accentuation would suggest to me an open ductus arteriosus."[1]

1. I have taken the following notes from Dr. Thayer's memoranda: "Weight, 121½. Color is good. General nourishment good. Pulse, 21 to the quarter at the beginning of examination, regular. Radial, not palpable. Pressure, by estimate, 120-25; measurement, maximum, about 115; minimum not easy to estimate. Thorax, symmetrical. Costal angle about 90. Movements, equal. Resonance and respiration clear in front. Back perfectly clear. Heart, P. M. I. in the fifth space, approximately normal position, 8.6 cm. from the median line, begins above in the second space and extends about 5.5 cm. to the right of the median line in the fourth space. No thrill in the precordial region, although the impulse is rather well felt in the second and third left spaces. Sounds, at the apex, first clear excepting for a soft systolic gradually fading away. Second, clear, followed by a very soft diastolic. As one reaches the fourth space a characteristic long machinery sound with systolic accentuation lasting through the whole cycle is audible. This is loudest in the third space, well heard in the second, also over the right side and out over the left chest. In the first left space under the clavicle the murmur was also very long and well heard with late systolic or, perhaps, even diastolic accentuation. The second pulmonic is loud and sharp. The second aortic is also of fairly good intensity. Right kidney descends below the costal margin. Liver is just felt descending below the costal margin on deep inspiration; no enlargement. From the character and position of the murmur one is justified in assuming a septum defect, and from the murmur which is heard up under the clavicle in so high a position, an open ductus Botalli."

During 1908 the patient was fairly well so long as she lived a quiet life and refrained from lifting heavy objects, which gave her pain in the abdomen and slight palpitation of the heart. In November she suffered from another attack of influenza, with tonsillitis, slight bronchitis, and a little pleurisy at the base of the left lung. The mild fever left her very much exhausted, with a hoarse voice and irritating cough, due apparently to a large lingual tonsil and relaxed uvula, but with no new cardiac symptoms, either objective or subjective. She continued hoarse, and although the cough was gone by the end of February, 1909, her heart began to be more dilated and to have the murmurs and irregularity first heard in 1906. After a visit to Lakewood, in April, however, she gained several pounds in weight and felt better, although there was now in addition to the hoarseness a peculiar thin voice.

On April 22, 1909, I referred the patient to Dr. E. Terry Smith of Hartford, who reported a paralysis of the left vocal cord, caused probably by pressure from the heart on the abductor fibers of the left recurrent laryngeal nerve.

A report by Dr. Goodale of Boston, a week later, confirming Dr. Smith's diagnosis, was as follows:

"April 30, 1909. Left vocal cord fixed in median line, immovable on phonation and respiration. Left arytenoid moves inward slightly on phonation. There is no evidence of thickening or irregularity in or about the arytenoids.

"The preservation of motion in the left arytenoid on phonation is due to the contraction of the interarytenoid muscle, indicating preservation of function in the superior laryngeal nerve. This movement, together with the absence of irregularity or thickening in the left arytenoid joint, renders it probable that there is no ankylosis in the joint itself. It is, of course, possible that Mrs. X.'s abductor paralysis arises from grip or laryngitis, but this is, to my mind, less probable than that it arises from pressure along the course of the nerve, for the reason that general infections do not, as a rule, affect the abductor fibers alone of one cord."

The patient was then sent to Dr. Percy Brown of Boston, who made a Roentgen diagnosis of her heart as follows:

"The base of the heart, examined from both behind and in front, presents an undue and abnormal bulging on its left side, which markedly changes the shadow usually recognized as the normal in form and size. This appearance is in close juxtaposition with the descending arch of the aorta, and may to a certain extent involve that structure. The dilatation is general, however, rather than a sharply localized expansion, which would tend to rule out the likelihood of aneurism as being the etiologic factor. I am rather of the opinion that it is due to a hypertrophied and dilated left auricle, secondary to an insufficient mitral valve. This dilatation is the only apparent cause of the mechanical inference with the function of the recurrent laryngeal branch."

For one month, while the patient was living quietly and taking simple vocal lessons, the heart symptoms again improved and the voice became nearly normal, but on June 1 she complained, when walking, of severe paroxysmal pains in the abdomen and legs, especially in climbing stairs or going up hill. The heart was not then larger than usual and the murmurs were faint; pulse 80; systolic blood-pressure was 118, and hemoglobin normal; urine normal. On June 5 the apical mitral murmur of 1906 returned, and the left area of dulness extended 3 cm. to the left of the nipple; pulse 100. On June 11 the pulse was 70 and regular, but a hard, suffocating pain was centered in the stomach and abdomen, at times accompanied, when walking was attempted, by severe pressure below the diaphragm. This persisted for one week, when some edema was noticed in the face and abdomen; the patient passed 500 c.c. of urine in eighteen hours full of urates, but containing no albumin, the specific gravity being 1040; her radial blood-pressure was 140. Digitalis being contraindicated, warm Nauheim baths were given, plus strophanthus and diuretin; the urine increased to 900 c.c. for a few days and the abdominal girth was reduced 6 cm.; at the same time the heart sounded stronger, and the edema left the face. Then, however, the stomach became irritable, the heart began to be very irregular with loud aortic murmur, and all baths and heart tonics were replaced by calomel, Epsom salt, and codein. On July 5, the voice again showed signs of the former paralysis, and a laryngeal cough was almost constant; the pulse was 105, pressure 130; the legs were very much swollen; the stomach and bowels were full of gas and the urine scanty. On July 9 she could not rest for a moment, owing to the laryngeal cough and cardiac discomfort; at 5 a. m. of the 10th she broke into a profuse cold perspiration; at 7 a. m. she seemed faint and lapsed into a short stupor, after which until death no pulse could be detected at the wrist, even though hypodermic stimulants were freely injected; the carotid pulse was 104, very irregular, and the patient had difficulty in breathing, was restless and thirsty all day, dozing at brief intervals; she took a little nourishment and passed about 7 ounces of thick urine. At 10 p. m. she had another period of fainting with profuse perspiration and gasping, after which she could with difficulty be aroused, her speech was somewhat incoherent and thick, and she was still very restless. At 12:55 a. m., after swallowing a few drops of liquid, she suddenly threw up her arms, opened her eyes widely, gasped once or twice, and died.

So much for the patient's symptoms while under my care. Her earlier medical history is very meager. She was born in Berlin, Germany, a perfectly normal birth and a typically healthy baby, it was thought, but the physicians of her childhood are dead. A letter from Dr. Max Ph. Meyer, Geh.-Sanitätsrath, gave the following information: There was a systolic murmur over the mitral valve, which was louder during the fever of measles in 1895. In 1899, after a period of fatigue, the aortic valves were not found to be free from chronic inflammation, the tones not being quite clear. A note from Dr. Geheimrath Wolf says: "After two examinations, I found a good compensation in the heart (*ein gut compensierter Herzfehler*)."

Owing to the peculiarity of the symptoms in this case and the lack of early history, together with her early death, it seemed wise to seek for a postmortem diagnosis in order to make it possible to use for future cases whatever could be learned of the exact causes for the cardiac weakness in this patient. Dr. Jessie W. Fisher, pathologist to the State Asylum for the Insane at Middletown, Conn., performed an autopsy with the following result:

"*Necropsy.*—Some twelve hours post-mortem. Rigor mortis moderate. The patient was a well-developed, well-nourished, but undersized woman, 26 years of age, with distended abdomen, edematous feet and legs, and cyanosed face and neck. Panniculus adiposus was 3 cm. in thickness. The stomach was much distended with gas, and the abdominal cavity contained at least 2,000 c.c. of straw-colored fluid.

"Thorax: Both parietal and visceral layers of the left pleura were adherent laterally, posteriorly, and to the diaphragm. The right pleura was free.

"Left Lung: Weight was not taken. The lower lobe showed hypostatic congestion, the remainder of the lung being crepitant, presenting no abnormalities. Bronchi free and unobstructed.

"Right Lung: Lower lobe showed a slight amount of hypostatic congestion. Otherwise the tissue was normal.

"Heart: The pericardium was smooth and glistening and covered by a very thin layer of fat. The pericardial sac contained about two ounces of fluid blood. When the sac was opened, three ruptures on the right ventricle appeared, parallel to the descending branch of the anterior coronary artery, and 3 cm. to 4 cm. to the right of it. The first was 2.5 cm. from the pulmonary valve, and was 9 mm. in length, slit-like in appearance, involving only the superficial fibers. The second was near the apex of the heart and measured 15 mm. in length externally and penetrated the ventricle by a minute aperture. The third, immediately below and on the apex of the right ventricle, was 15 mm. in length externally, but presented only a pin-point opening internally.

"At autopsy the ruptures seemed to be in the left coronary artery, but on later dissection of epicardial fat the first rupture lay 3 cm. to the right, and the second and third ruptures 4 cm. to the right of the left coronary.

"The ruptures lay in almost a straight line with each other, and the blood had separated the epicardium above and below them, giving the appearance of a thrombosed vessel.

"The ductus arteriosus was patent and had developed into a good-sized vessel, with walls 1.5 mm. in thickness. The diameter of the opening into the aorta was 1 cm., and into the pulmonary artery was 4 mm., where it was surrounded by a thickened ring, and slight fold of membrane. It was funnel-shaped with large end in aorta and 1 cm. in length. The aortic opening of the duct was located opposite the left subclavian artery.

"Heart weighed 395 gm. (Osler gives the weight of a normal female heart as 250 gm.)

"The heart was in systole. The right side was dilated and hypertrophied, containing fluid blood. The right auricle and ventricle were nearly twice as large as normal, and the right ventricular wall was almost as thick as the left, which was also hypertrophied. The foramen ovale was closed, but the fossa was 2.5 by 1.5 cm. At its base the Eustachian valve formed a membranous valve 1.5 cm. in width and 4.5 cm. long, containing muscle fibers.

"Beneath the epicardium of right ventricle there was a marked accumulation of fat, which covered the myocardium and coronary arteries completely.

"The myocardium was thickened, pale in color, and flabby, especially in the right ventricle.

"The auriculoventricular node was well marked, lying between the fossa ovalis and enlarged Eustachian valve. The fibers seemed to pass to the left, where they were lost.

"The ventricular septum was thickened without any indications of defect.[2]

"The pulmonary artery was almost twice the size of the aorta; it was soft, and the aorta slightly thickened around the duct and valve. Insertion of the duct into the aorta was almost at a right angle.

"The cusps of the pulmonary valve were smooth, thin, transparent and competent. The cusps of the tricuspid valve were smooth, glistening and competent. The aortic cusps were slightly thickened throughout and the aortic opening stenosed. The aorta showed plaques of sclerosis around the valve. The cusps of the mitral valve showed slight thickening along the free borders. This opening was small and stenosed. The descending branch of the left coronary was small and walls thickened, but not calcareous. The right coronary was larger than the left, and like it thickened throughout its course.

"Measurements: Tricuspid, 11.5 cm.; mitral, 8.5 cm.; pulmonary, 7.0 cm.; aortic, 5.0 cm.; left ventricle, 1.3 cm.; right ventricle, 1.1 cm.

"Larynx and Trachea: The recurrent laryngeal nerve was normal in appearance, as was the vagus. The larynx, vocal cords and trachea presented no evidence of pathologic change, except for a small tracheocele situated just above the bifurcation of the trachea. Microscopically, the recurrent laryngeal nerve showed no degeneration with Marchi's stain.

"Microscopic examination of muscle near site of rupture: eosin and methylene blue sections stained poorly, nuclear outline faint or nuclei entirely absent. Muscle fibers separated from each other, and intervals filled with red blood cells. Cross striations very distinct. Some fragmentation. Soudan III sections showed muscle cells loaded with fine granules of fat. Hematoxylin and eosin same as methylene blue and eosin.

"Kidneys: The kidneys were pale in color. The capsule peeled easily, leaving a smooth surface. On section the tissue was pale; the cortex was a trifle narrower than usual, but the markings were distinct. On microscopic examination of the kidneys, capsule of Bowman showed considerable thickening and swelling of the cells lining the capsule, and the epithelial cells lining the tubules were swollen and granular. All of the vessel walls showed extreme thickening.

"Liver: The liver was slightly enlarged, but was not removed for examination.

Anatomic Diagnosis.—"Rupture of the heart and sclerosis of coronaries, patent ductus arteriosus, aortic and mitral stenosis and chronic endocarditis of aortic and mitral valves, atheroma of aorta, hypertrophy and dilatation of right heart, tracheocele, slight chronic nephritis, fatty degeneration of myocardium."

Having the autopsy report, it was not difficult to explain the symptoms during the life of the patient, for, doubtless, the primary cause of all the pathologic findings in this heart was the persistent patency of the ductus arteriosus. Dr. H. Gideon Wells[3] has found in all literature only forty-one cases of uncomplicated ductus arteriosus reported with corroboration of the diagnosis at autopsy, and in only twenty of these cases did the subject reach maturity.

In Maude E. Abbott's[4] tabulated series of 19 cases of patent ductus arteriosus, the oldest patient was 53, the youngest 6 years old; nine were males, ten females. Out of 106 cases of patent ductus arteriosus, there were eighty-seven cases complicating the defects, leaving the above-mentioned nineteen cases which were proved at autopsy to have the simple defect of patent ductus arteriosus. She gives as causes for this defect the loose musculature of the artery, the sudden change in cardiac blood-pressure at birth, and the alterations in relative position of the ductus and great vessels due to stretching, etc. The usual funnel shape of the ductus is caused by the back pressure of blood from the aorta into the pulmonary vein, but where there is congenital aortic stenosis the current should be reversed. The pulmonary artery and the right ventricle must naturally dilate, and arteriosclerotic patches are not uncommon in the neighborhood of the patent duct and aorta. As for symptoms of a patent ductus arteriosus there may or may not be a systolic thrill, but the "long machinery murmur" is nearly always produced, and the accentuated second pulmonary sound distinguishes this anomaly from pulmonary stenosis. Several other writers have also mentioned the paralysis of the left recurrent laryngeal nerve, due to pressure on that nerve by the patent duct or enlarged auricle, which causes a laryngeal spasm prolonged for hours at a time, giving the right ventricle no time to recover from the added resistance to its contraction, and therefore aiding permanent dilatation of the right side of the heart with all its attendant evils.

My case differed in many points as to symptoms from that reported by Dr. H. Gideon Wells. His patient was 42 years old, suffered from symptoms of gall-duct disease or of acute yellow atrophy of the liver, and died from a hemorrhage of the bowels with a temperature of 106, after a few days in the hospital. The previous history of his case was negative, and the examination of the heart when the patient entered the hospital showed systolic murmurs from the second to the sixth right interspace, so that a tentative diagnosis was made of aortic dilatation with enlarged heart. In the case of my patient, there was no other disease of the body and no symptoms not explained by the condition of the heart, which, however, was well hypertrophied and did not appear by percussion, palpation or auscultation to be unequal to its task. This patient was very susceptible to influenza, having one or two attacks every year. These attacks always increased temporarily the cardiac irritation, and the murmur was at such times much more noticeable than at other times.[5] In 1906, when the patient went through a successful pregnancy, the mur-

2. The thickness of right ventricle wall is normally 4-7 mm.; left ventricle, 20-25 mm.; left auricle, 3 mm.; right auricle, 2 mm.

3. Wells, H. Gideon: Persistent Patency of the Ductus Arteriosus, Am. Jour. Med. Sc., 1908.

4. Abbott, Maude E.: Statistics of Congenital Cardiac Disease (400 cases analyzed), Osler's Modern Medicine, iv, 396.

5. Schlagenhaufer's case of acute aortic endocarditis from the influenza bacillus in a case of patent ductus arteriosus suggests, along with my case, the possibility of the infection from influenza being more virulent than in ordinary cases.

murs were very slight, not recurring until after a nervous strain six months later.[6]

It is probable that our patient might have had no symptoms from the large patent ductus arteriosus if she had had no influenza and no other subsequent cardiac complications. Death from a patent duct is usually thought to occur in infancy, although the condition is one which might be overlooked in autopsy, and 9 out of 41 patients whose cases are reported by Wells lived more than forty years.

The characteristic signs of patent ductus arteriosus are in the main those indicated by Dr. Thayer after examining our patient. Osler's[7] terse symptomatology of a persistent ductus Botalli is as follows: "Loud, especially vibratory, systolic murmurs, with the point of maximum intensity over the upper third of the sternum, associated with a lack of marked symptoms of hypertrophy of the left ventricle." Thayer suspected also a septum defect on account of the character of the murmur over the third and fourth space, but this defect was not found on autopsy. Communication between the aorta and pulmonary artery might cause much the same symptoms as from the communication between the auricles. Their etiology is different, but the physical signs of hypertrophy with systolic murmurs at apex, and generally a diastolic murmur, or continuous murmurs[8] are common to both conditions. A septum defect is, however, frequently found in hearts in which there is also patent ductus arteriosus. W. Langdon Brown[9] says: "The deficiency in the exit of blood from the right ventricle will be made good to some extent by the ductus arteriosus remaining open."

Let us now look at the patient's subjective symptoms, as explained by the condition of the heart at the autopsy, and then at the objective symptoms which called forth various hypotheses.

For the last five years of her life the patient complained frequently of palpitations of the heart, sometimes at night, sometimes on exertion. It is possible to explain these symptoms by the mitral stenosis, since out of seventy-three cases of irregularity of the heart, Lewis found that 52 per cent. were instances of mitral stenosis. In many of these patients symptoms of valvular lesion were absent, the patient complaining of short-windedness, fluttering in the chest or neck, and gastric discomfort, the palpitations sometimes occurring in the middle of the night. Such was the case in my patient, the mitral lesions at times being impossible to define, but owing to the slight sclerosis of the mitral valves, there was at times some stenosis of that orifice, which would cause an increase of the interauricular pressure and eventually a condition of fibrosis of the auricles as well as in the ventricles. Lewis[11] says that it is possible that fibrosis by interfering with the circulation in restricted areas of the musculature sets up a state of irritability. Anemia of the muscle does the same thing, and may also result in extra systoles, and more or less permanent irregular tachycardia. "Unexpected death in patients with fibrotic hearts is a well-recognized fact." The aortic murmur, not always present, was caused by an incompetent thickened edge of one cusp of its double valve. Osler[12] thinks that this condition is generally well compensated, and may not shorten life. Broadbent, on the contrary, finds that 40 years is about the limit of life in this condition. Where there is any sclerosis of the aorta, however, there is apt to be a narrowing of the orifice of the coronary arteries. Sudden death may be caused by the blocking of one of these coronary arteries, or there may be a more deliberate sclerosis or a narrowing of the coronaries, which leads to fibroid degeneration of the cardiac muscle and eventually to fatty infiltration or fragmentation of the muscle fibers.

In regard to the degeneration of the coronary arteries, Abbott says:

> I believe that the commonest site for rupture of the cardiac muscle is on the anterior wall of the *left* ventricle [in our case it was the *right*] near the interventricular septum, about the junction of the lower and middle thirds, and the reason that this is the "seat of election" is because this area is supplied by the descending branch of the anterior coronary artery (the artery of the septum), which is a very common branch to undergo thrombosis, or embolism, thus leading to infarction of the supplied area of heart muscle. This vessel has been called the artery of sudden death, because disease of it is so frequently followed by serious results.[13]

In this connection an interesting question arises: Was the intense pain in the legs and abdomen of this patient due to sclerosis of the coronaries and referred to the abdomen instead of being felt in the heart? Or may there have been a sclerosis of the femorals with intermittent claudication, as well as sclerosis of the aorta and coronaries? The victims of angina may be due to a chronic arteritis in the gastric and mesenteric vessels, as well as to the heart. The radial blood-pressure in my patient never exceeded 140, but it is said that even low blood-pressures may co-exist with early arteriosclerosis. Certainly the intense throbbing in the abdominal aorta ought to have shown a higher pressure there than that in the radials.[15] Osler[16] says that spasm or narrowing of a coronary artery, or even of one branch, may so modify the action of a section of the heart that it works with disturbed tension, and there may be stretching and strain sufficient to arouse painful sensations, like the intermittent claudication of the arteries of the legs in a case of cramp.

At the autopsy there was thought to be a condition of thrombus of the anterior coronary artery with rupture in three places, but on careful dissection and microscopic examination the arteries were found to be unruptured, and it was the muscle of the right ventricle at a distance of 3 or 4 cm. from the artery, parallel with it, which ruptured, close to the interventricular septum where its circulation was probably the poorest. Abbott writes that this is a rare condition. She says:

> "We have four cases of rupture of the heart in this museum, in three of which the seat of rupture is in the situation above described, i. e., the left ventricle wall. Another possible explanation may be that the auriculoventricular bundle of His is distributed so extensively in the septum that disease of the artery supplying the septum may be productive of more serious disturbance than that of the artery in another part of the heart."

There was no sudden pain in my patient's case to note the formation of a thrombus, only restlessness and anx-

6. One such case is reported in which the diagnosis of patent ductus arteriosus was made in infancy, and again ten years later, and also at the age of twenty years, when Balfour confirmed the diagnosis, after which time the condition began to disappear until, at the age of thirty-five the lesion seemed to have healed entirely.
7. Osler, William: Practice of Medicine, p. 769.
8. Osler, W.: Practice of Medicine, p. 367.
9. Brown, W. Langdon: Physiological Principles in Treatment, p. 308.
11. Lewis, Thomas: Paroxysmal Tachycardia, Heart, No. 2, i.
12. Osler, W.: Practice of Medicine, p. 729.
13. Dr. Osler speaks of this in his address on Angina Pectoris, New York Med. Jour., 1897, lxiv.
15. Osler: Modern Medicine, iv, 285.
16. Osler, William: Lancet, London, March 26, 1910.

iety, followed by collapse, when the heart ruptured, not only once but three distinct times. The patient's father died probably from thrombosis of the coronaries several days after an operation for appendicitis, and as Blumer[18] suggests, there may be an inherited tendency to the production of thrombogen or thrombokinase. The effect of ligation of the coronary artery must be similar to thrombosis. Lewis says:[19]

In the case of the right coronary, the area devascularized includes the right auricle and the greater part of the right ventricle. The muscle involved blanches and then becomes livid. The right auricle continues to beat less and less strongly, while the ventricle follows even less strongly to final fibrillation. Tachycardia was obtained in nine out of the twelve cases of right coronary artery ligated, cardiac irregularities most often following obstruction of this artery, and paroxysms occurring in from fifteen to sixty minutes after interference with the vascular supply, the paroxysms varying from a few seconds to thirty-five minutes in duration. But if tachycardia is caused by a lesion in the cardiac muscle of the right ventricle itself, independently of nervous control, heart-block and a stop of the auricular beat can be also caused by irritation of the vagus.

Fig. 1.—Heart from subject with persistent patent ductus arteriosus; A, aorta; D, ductus arteriosus; P, pulmonary artery; R, ruptured right ventricle.

Therefore, in this case, the anemic condition of the cardiac muscle, or of the bundle of His, caused by a lack of blood-supply from the sclerosed right coronary artery, may have been the cause of the palpitations and discomfort, while the dilatation of the stomach and intestines may have produced pneumogastric irritation which further increased the cardiac irritability, resulting in fibrillation of the ventricle and sudden death from ventricular exhaustion. The rate of rhythm of the ventricular contraction varies from 140 to 420. In my patient the pulsation in the left carotid was from about 160 to a beat too rapid to count, followed by sudden stillness. At the autopsy the blood found in the pericardial sac amounted to only 60 c.c., too little of itself either to stop the heart by pressure or anemia, many a stab wound of the heart being larger than all of the ruptures in the right ventricle. Therefore, it seems to me that we may be justified in attributing death ultimately in this case, to the trouble in the sino-ventricular conducting system[20] rather than to the rupture, and that neither the patent ductus arteriosus nor the aortic stenosis would have been incompatible with long life. In all the cases of heart-block or extrasystole which have come to autopsy, there have been shown either gummata, anemic necrosis on account of thrombosis of the nutrient arteries, fibrosis, new growth, atheroma, or fatty infiltration.[21] The common cause is the same, i. e., interference with the conducting bundle (the auriculo-ventricular bundle), or its node.[22] This is probably one of the reasons why digitalis failed to be of service in the case in question, and explains the

Fig. 2.—Rupture seen from apex of heart.

18. Blumer: In Osler's Modern Medicine, iv, 504.
19. Lewis, Thomas: Auricular Fibrillation and Its Relationship to Clinical Irregularity of the Heart, Heart, 1910, No. 4, i, 368.
20. Retzer has renamed the bundle of His the sinoventricular conducting system. This he considers a neuromuscular apparatus possibly connected with the sympathetic ganglia, the end organs of the conducting system being surrounded by a plexus of non-medullated nerves. Retzer: Anat. Rec., ii, 149; Johns Hopkins Hosp. Bull., 1908, p. 208.
21. Thomas Lewis in a recent article on auricular fibrillation has formulated the following data as to the action of digitalis. "Digitalis retards the ventricular rate in clinical auricular fibrillation by enhancing a previously existing auriculo-ventricular heart-block. The rapid and irregular impulses showered on the ventricle from the fibrillating auricle are hindered in their passage from one chamber to the other by the action of drugs of this class. The influence of digitalis is exerted, directly or through the vagus, on the junctional tissues between auricle and ventricle."
22. Brown, W. L.: Physiological Principles in Treatment, p. 251.

symptoms of fluttering or big thudding beats, or the long pauses often complained of by the patient, when taking this remedy, and which were dismissed as being irregularities due to indigestion and not to organic change in the heart. In a recent case of rheumatic endocarditis, Mackenzie[23] observed a delay in the *a-c* interval, which was greatly increased by digitalis so that several ventricular beats dropped out altogether,

Fig. 3.—A, aorta; P, pulmonary artery; D, ductus arteriosus laid open, showing the opening into both the aorta and pulmonary artery.

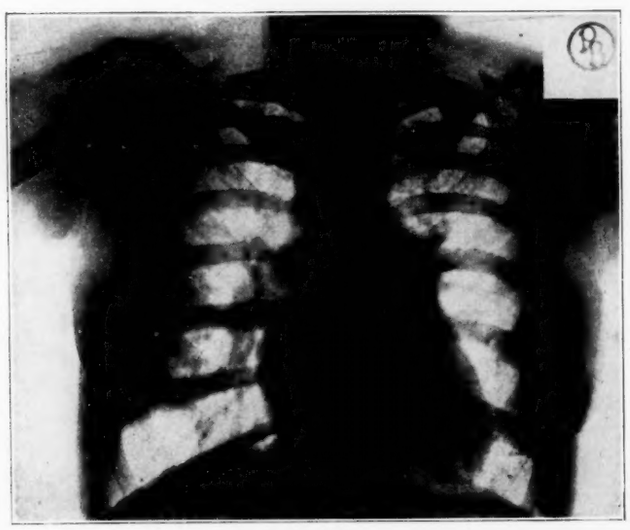

Fig. 4.—Radiograph taken by Dr. Percy Brown, Boston, three months before the death of the patient.

and the pulse became markedly irregular. Stimulation of the vagus was also capable of converting delay of auriculoventricular conductivity into actual heart-block.

During all this time, despite the futility of treatment, the patient's color was very good. She was healthy looking, cheerful, interested in everything but herself, and never anxious as to her ultimate recovery, an optimism which was shared by all the consultants who examined her, as well as by me, up to the last thirty-six hours, when all the disagreeable symptoms rapidly increased, the most troublesome of all being the continuous laryngeal irritation, and which no hypodermics or any form of treatment could arrest until the final rupture of the heart and death.

The kidneys and liver shared in the general discomfort of this patient for the last two weeks of her life. The liver may be looked on as a sponge-like safety-valve to the heart, which works to its own destruction until edema and ascites occur. If death follows soon, the liver shows its engorgement; if death is postponed, the liver shrinks and shrivels. The edema and ascites in this case remained stationary, and the liver was not noticeably enlarged or fatty.

The condition of the kidneys and their function in this case is best described by Osler. "There is a great lessening in the total amount of urine excreted; darker color, strongly acid reaction which is caused by sarcolactic acid made from the poor arterial blood, and slight albumin." In other words, a mild nephritis, with thickening of the wall of the arteries such as was found at autopsy.

It is evident that we have one great lesson to learn from the history of such a case as this, namely, the necessity of early diagnosis of congenital defects in the heart, with consequent insistence on a hygienic life, protection as far as possible from infectious diseases (including rheumatism and common colds as well as influenza and children's diseases), and avoidance of nerve or muscle strain. Careful study of cardiac murmurs should teach us to know congenital anomalies, in order to differentiate them from endocardial inflammatory changes in the valves; and wherever it is possible, the diagnosis should be confirmed by autopsy and the cases studied and published for the benefit of the medical profession in the care of similar cases.

23. Carter, Alfred H.: Article on Heart Disease, Quoted in the Internat. Med. Ann., 1908, p. 288.

ABSTRACT OF DISCUSSION

DR. WILDER TILESTON, New Haven, Conn.: I should like to emphasize the paralysis of the recurrent laryngeal nerve. Pressure by a dilated ductus arteriosus must now be added to the list of possible causes of recurrent laryngeal paralysis. A few years ago v. Schroetter, jr., of Vienna, reported a case of patent ductus with laryngeal paralysis, exactly similar to Dr. Mead's. At that time this was the only case of the sort to be found in the literature.

SIMPLIFIED OPERATION FOR CHALAZIO

ROBERT SCOTT LAMB, M. D., WASHINGTON, D. C.

Ophthalmic surgeons have from time to time had recurrences after incising and curetting chalazia and I desire to call attention to a simple procedure which prevents the reforming of secretion in a not quite obliterated cyst wall. After anesthetizing the conjunctiva a chalazion forceps grasps the lid surrounding the tumor and the usual incision of the conjunctiva and the sac beneath is made at right angles to the lid margin. The contents are then carefully removed with a curette and the bleeding controlled. A strabismus hook is then heated red over an alcohol flame, or an electric cautery point is used to gently touch the interior of the sac and so destroy the secreting surface. This has the obvious advantage over extirpation of simplifying the operation and the after-treatment and of lessening the trauma. Previously I had used tincture of iodin, and at another period phenol, but nothing has been quite so satisfactory in my hands as the above procedure.

SODIUM CACODYLATE IN SYPHILIS

REPORT OF A CASE

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History.—E. H., a young man, aged about 23, presented himself for treatment with a typical chancre on his lower lip. He gave a history of having a "cold sore" on his lip, and had become inoculated about a month or so before, by kissing. The disease is directly traceable to a woman who had syphilitic mucous patches on the inside of her lips. Dr. L. F. Jermain saw the patient also, and we made the diagnosis principally from the secondaries and the history of the case, examination for spirochetes not being deemed necessary.

Fig. 1.—Chancre of lip at beginning of treatment with sodium cacodylate, Oct. 24, 1910.

Fig. 2.—Soft, elevated, bleb-like condition, free from scab after fourteen days' treatment.

Examination.—The cervical and sublingual glands were swollen and nodular, and small papular eruptions were beginning to appear on the patient's face. He had received no treatment before he consulted me, which was on Oct. 24, 1910. The left tonsil was also swollen, as the photograph of October 24 shows.

Treatment.—I began October 24 giving one grain doses of sodium cacodylate by hypodermic injection into the pectoral muscles every twenty-four hours and continued this for eight days; then I doubled the dose for four days more. After the first dose, the pain and all the secondaries began to disappear, and at the end of twelve days all secondary manifestations had disappeared, but the chancre was not entirely healed; it was more circumscribed, however, and being afraid of the secondaries coming back, I consulted Dr. J. B. Murphy, who advised the injection of three grains daily for seven more days, which I did, with marvelous results. The scab cleared away like magic, and at the end of nineteen days' treatment all traces of the disease had left the patient, except a slightly elevated and indurated surface on the lip, which has since subsided and is forming a healthy scar under the influence of one grain doses of the drug given subcutaneously daily.

Fig. 3.—Beginning healthy scar; photograph taken Nov. 20, 1910.

I treated this patient continuously from October 24 to November 20, as described above, excepting for two days while waiting to hear from Dr. Murphy. No other local or internal treatment was used. Of course time alone will tell whether the result is permanent, but I think the drug used is safe, because one can, as it were, feel one's way. I saw no disagreeable effects outside of a strong arsenical breath, which was so strong that one day the patient blew his breath on a fresh rose and it actually died inside of five minutes; this occurred at the end of a three-grain treatment. Physically the treatment had no ill effect on the patient, and he is now, as far as I can see, entirely cured.

600 Grand Avenue.

TRAPEZIUS TRANSPLANTATION IN THE TREATMENT OF DELTOID PARALYSIS

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Although muscle and tendon transplantation has been used extensively during the past fifteen years to correct motor disturbances following paralysis of a muscle or group of muscles, but few cases are reported in which the procedure has been used to correct the motor disturbances associated with deltoid paralysis. Hoffa[1] reported three cases and Gersuny[2] one in 1906 in which the trapezius was transplanted into the paralyzed deltoid, and during the past year Kiliani[3] has reported another. The results in two of Hoffa's cases were very satisfactory. The third case could not be traced. In Gersuny's case the arm could be raised to the horizontal in four months and at the end of six months the range of motion approached the normal, but the movements were not carried out with much power. Kiliani's patient had a fair degree of motion after three months. Of the

1. Hoffa, A.: Ueber die End-Resultate der Sehnenplastiken, Arch. f. klin. Chir., 1906, lxxxi, 493.
Gersuny: Eine Operation bei motorischen Lähmungen, Wien. klin. Wchnschr., 1906, p. 263.
3. Kiliani, O. G. T.: An Operation for Paralytic Shoulder-Joint due to Infantile Paralysis, Ann. Surg.,1910, li, 79.

five patients operated on by transplantation of the trapezius into the deltoid, the results were highly satisfactory in four.

The object of this communication is to add reports of two cases to the five already published and to suggest a point in technic which, I believe, will prove to be of value.

The operation as originally practiced by Hoffa consisted of separating the clavicular, acromial and a portion of the spinous attachments of the trapezius muscle and of suturing the muscle which had been separated into the deltoid low down, the arm being held in extreme abduction. Gersuny practiced much the same procedure. He, however, chiselled up some bone with the trapezius, hoping that he might secure a better line of attachment by approximating this to the deltoid. Kiliani introduced two new points in the technic, (1) shortening of the capsule of the joint, and (2) plication of the long head of the biceps.

In both of the cases in which I have operated I have plicated the long head of the biceps without shortening the capsular ligament, and I believe this procedure is

Deltoid paralysis of nine years' standing following anterior poliomyelitis. Power of abduction completely lost for nine years. Results eight weeks after transplantation of trapezius. The contracted outer border of the trapezius on the right side is prominent. History given under Case 2.

sufficient to overcome the pathologic subluxation in these cases.

The results of the first case in which I operated were not entirely satisfactory. The imperfect result was due in part, I believe, to stretching of the paralyzed deltoid muscle.[4]

AUTHOR'S TECHNIC

In the second case the following technic was employed:

1. A longitudinal incision was made extending from the middle of the outer border of the trapezius muscle down to the junction of the middle with the lower third of the deltoid muscle.

2. The clavicular, acromial and a portion of the spinous attachments of the trapezius muscles were separated.

3. The atrophic deltoid was next separated from the clavicle and spine of the scapula and turned down.

4. The sheath of the long head of the biceps was opened, and the tendon, after being displaced from its bed, was plicated to correct the pathologic subluxation.

5. An attempt was then made to suture the trapezius low down on the humerus. This was impossible, because the spinal accessory nerve interfered. The trapezius was then sutured into the capsule, where it is attached to the humerus. I believe that the suture of the trapezius into the capsule at its attachment to the humerus is an important point. If it were possible, it would be better to suture the muscle directly into the bone lower down, but the spinal accessory nerve becomes so tense that its function would be interfered with if the attempt were made. The trapezius can easily be sutured at the line just mentioned, and apparently this attachment affords sufficient purchase to carry out the movements which follow contraction of the muscle.

6. The deltoid was then sutured over the trapezius high up, the arm being held in hyperabduction.

7. The upper part of the skin suture was sutured transversely, with the idea that shortening the skin incision in this way might aid in overcoming the pathologic subluxation. The incision when completed resembled the letter T, the horizontal arm of the T extending across the summit of the shoulder.

The arm was then dressed at an angle of about 100 degrees, and maintained in this position for about four and one-half weeks. Then it was gradually lowered.

The results at the end of eight weeks are shown in the accompanying illustration. The patient raises the right arm, the forearm being flexed, quite rapidly to the horizontal, but she cannot hold the arm in this position for any great length of time. The movements are carried out with precision and power. The outer edge of the contracted trapezius can be seen in the illustration. No contraction of the deltoid takes place. The pathologic subluxation has been overcome and the appearance of the shoulder has been improved, as it now has a rounded contour. There had been complete loss of abduction in this case for nine years. Paralysis of the deltoid was apparently due to anterior poliomyelitis.

The following are the histories of the two cases:

CASE 1.—*History.*—Mr. E. B., aged 25, was referred to me Jan. 17, 1910, by Dr. Thor Rothstein, who suggested that the trapezius muscle be used to correct the effects of the deltoid paralysis. Two years previously, the patient had fallen into a pit and had injured his chest and left shoulder. He soon went back to work, but was unable to use the left arm as he did before the injury. About two weeks after the accident, he was taken sick, with high fever, nausea and vomiting, headache and pain in the muscles of the neck. After about thirty-six hours the left upper extremity was almost completely paralyzed.

Examination.—The left upper extremity hung perfectly limp. The muscles about the shoulder were flattened and atrophic. The supraspinous and infraspinous fossæ were sunken; the acromion process was prominent and the head of the humerus was displaced downward and forward; two fingers could be placed in the groove between the acromion and the head of the humerus. The forearm could not be flexed and the muscles on the anterior surface of the arm were atrophic; the biceps and brachialis anticus were paralyzed. There was some pronation, but both pronation and supination were seriously interfered with. The fingers were partially flexed in a position somewhat suggestive of claw-hand and the interossei muscles were atrophic. Sensation in the entire extremity was somewhat impaired. The patient had no motion in the upper extremity, except a peculiar swinging movement, which occurred when he swayed the entire body.

Operative Results.—These were not altogether satisfactory. The pathologic dislocation was corrected; there was some abduction of the arm, but the improvement did not permit any great range of motion. The failure was in part due, I believe, to the lengthening of the paralyzed deltoid muscle, on which depended the transmission of power obtained by transplantation of the trapezius.

4. Bradford, in the August number of the American Journal of Orthopedic Surgery, reports seven cases of deltoid paralysis treated by the periosteal silk strand transfer method. The results were satisfactory. He believes that this method does away with the possibility of stretching of either the transplanted or paralyzed muscle.

CASE 2.—*History.*—Miss K., aged 18, up to the age of 9, had had full use of the right arm. At this time she fell from a fence, a distance of about 4 feet, and struck on the summit of the shoulder. Immediately following the fall there was some loss of function, but this, as the patient stated, was due to local tenderness about the shoulder. Following the fall, the patient was sick in bed for about two weeks. She could not state the nature of her illness, but at the end of one week there developed, quite suddenly, paralysis of some of the muscles about the shoulder. This was evidently a case of cervical poliomyelitis, although the history is somewhat suggestive of an ascending neuritis of the axillary nerve.

Examination.—The right arm hung limp. The shoulder was flattened, the head of the humerus was displaced downward, so that a finger could be placed in the groove between it and the acromion. The supraspinous and infraspinous fossæ were full, but rotation was somewhat interfered with. The latissimus dorsi was somewhat atrophic. There were no sensory disturbances. The muscles of the arm were well developed, but flexion of the forearm was not as strong as on the opposite side.

Operative Results.—The trapezius was transplanted as described, and at the end of eight weeks the arm could be raised to the horizontal, as indicated in the figure.

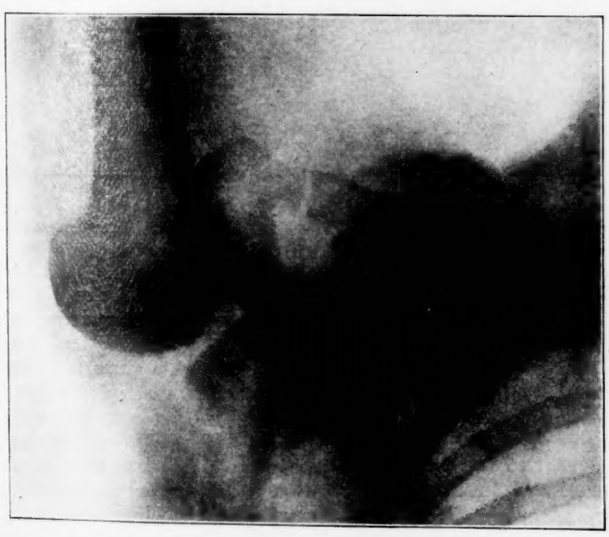
150 Michigan Avenue.

CONGENITAL DISLOCATION OF THE SHOULDER-JOINT

VICTOR F. HUNTLEY, M.D.
MANTON, MICH.

The skiagram shown here was taken during some experimental work on the chest, in an effort to demonstrate early tuberculosis. The case appeared to me to be so unusual at least, that I thought it might prove of interest to the many readers of THE JOURNAL; hence this report:

The case is that of a young man aged about 30, who has always been able by raising the arms above the head to produce a complete dislocation of the head of the humerus; the dislocation being downward and outward as is well portrayed by the skiagram. This anomalous condition causes no discomfort, as his occupation does not require any considerable employment of his arms in an overhead position, and the head of the humerus immediately resumes its proper place when the arms are in their resting position, the excursion of the head apparently causing no irritation of the surrounding ligaments and muscles.



Skiagram showing congenital dislocation of the shoulder-joint.

The point of particular interest, to myself at least, in this case is the position of the spine of the scapula and the apparent open space between or at the junction of the clavicle and the acromion process of the scapular spine. The skiagram was taken with the patient lying on his back on the table, arm drawn up and flexed at the elbow with the hand under the head. The extreme mobility of the scapula is well shown in the skiagram as well as the marvelous flexibility of the scapula and clavicle in the upward movement of the arm. The apparent break in the epiphysis is no doubt more apparent than real, the rays undoubtedly passing through the more porous texture of the bone. It serves to show the junction of the bones very clearly, and their relation to the coracoid process is also well developed while in this exaggerated position, and it brings out with great satisfaction the wonderfully flexible bony protection to this greatest of all joints, the human shoulder.

SPOROTRICHOSIS IN AMERICA

RICHARD L. SUTTON, M.D.
KANSAS CITY, MO.

Since the publication of my recent article on sporotrichosis,[1] I have received communications from several physicians regarding similar cases which they have encountered in their work. Although cultures were made in only a few instances, the clinical manifestations in the majority of the cases were such that there can be little doubt regarding the nature of the causative agent. Four other American cases have been reported since my article was written, one by Stelwagon,[2] one by Pusey,[3] and one by Hyde and Davis[4] (who refer to a third Chicago case under the care of Dr. Zuraski).

Pusey has suggested that the affection probably occurs much more frequently than statistics would indicate, and my experience certainly tends to prove the correctness of this supposition. The lesions often resemble those of tertiary lues, and as they heal promptly under antisyphilitic treatment it is very probable that many cases of sporotrichosis have been incorrectly diagnosed, but successfully treated, as instances of gumma. When the characteristic symptomatology of the affection is borne in mind, however, this mistake is not liable to occur.

A traumatic lesion of the hand, forearm, or leg which proves resistant to ordinary surgical treatment, and is accompanied by the development of one or more sharply circumscribed, painless, cutaneous or subcutaneous abscesses along the course of the limb, should always arouse suspicion, especially if the inflammatory manifestations typical of a streptococcic cellulitis are absent. A microscopic examination of the contents of the abscesses is usually negative, although the organism multiplies readily on agar and other simple culture media.

In France it has been found that the disease occurs more frequently in the rural districts than in the cities (owing to the fact that the sporothrix thrives best on vegetable matter, thus affording abundant opportunity for the infection of slight open wounds on the hands and arms of farmers and others of similar occupation).

1. THE JOURNAL A. M. A., Sept. 17, 1910, p. 1000.
2. Stelwagon: Diseases of the Skin, Ed. 6, 1910, Philadelphia, W. B. Saunders Company, p. 1119.
3. Pusey: Jour. Cutan. Dis., xxviii, 352.
4. Hyde and Davis: Jour. Cutan. Dis., xxviii, 321.

Since sporotrichosis in man is comparatively rare in America, the two following cases of the disease, and one of syphilis simulating sporotrichosis, are of interest:

CASE 1.—This occurred in the practice of Dr. Ira B. Chadwick of Tyro, Kan. I am indebted to Dr. Howard Hill of this city, for a photograph of the affected limb (Fig. 1), and for other courtesies. The history, taken by Dr. Chadwick, follows: The patient A. B., was a farmer's boy, aged 11, a native of Missouri, and a resident of Kansas. The cutaneous history of the family is negative. The lesion developed from a hen-bite on the back of the right hand. The wound had ulcerated under home treatment, and when first seen by the physician was oval in shape, with a raised border, and about the size of a silver dollar. Abscesses began to form on the

Fig. 1.—Wound on dorsum of hand, with typical chain of abscesses extending up the forearm (Case 1).

Fig. 2.—Site of original wound (3 months after injury was received) in Case 2.

forearm about four weeks after the injury was received. In the course of two months twenty-one abscesses developed. These were opened, treated with antiseptics, and later excised completely. At no time was there any glandular enlargement. The abscesses were confined to the arm, no other part of the body being affected. A number of microscopic examinations of the contents of the abscesses were made (methylene blue, Wright's, and carbol-fuchsin being used), but no micro-organisms were found. The pus resembled "thickened cocoanut milk." None of the incised lesions showed a tendency to heal, and recovery took place only after the entire wall of each abscess had been dissected out. Dr. Chadwick was repeatedly advised by other physicians to amputate the limb, but refused to do so. The patient was discharged cured at the end of ten weeks. Considerable scarring remains, but the patient retains perfect use of his arm.

CASE 2.—This occurred in the practice of Dr. N. P. Wood of Independence, Mo. The cultures were made and the etiologic organisms isolated by Dr. Frank J. Hall of this city, to whom I am indebted for the case history and for the photograph (taken by Dr. Hall's associate, Dr. O. L. Castle). The patient, L. M., was a farmer's daughter, aged 18, a native of Kansas and a resident of Missouri. The cutaneous history of the family is negative. The lesion developed from a slight wound on the back of the right hand, the patient having accidentally injured herself while feeding Kaffir corn to domestic animals. At the time the photograph was taken (Fig. 2), the lesion had been present three months. Two small, subcutaneous abscesses were present, one just above the annular ligament and one midway between the wrist and elbow. The sporotrichosis (Schenck) was secured in pure culture from one of the abscesses. All of the lesions healed promptly under the administration of potassium iodid.

CASE 3.—This occurred in the practice of Dr. C. D. Osborne of Highpoint, Mo. The patient, R. S., a farmer's daughter, aged 16, a native of Missouri and a resident of Moniteau County, Mo. Two months prior to the date on which the patient consulted Dr. Osborne, she had received a slight incised wound on the ball of the index-finger of the right

Fig. 3.—Ulcerated gummata (syphilitic) resembling the ulcers sometimes seen in sporotrichosis. The lesions are irregularly grouped, however, and considerably indurated.

hand while manipulating a kraut-cutter. The lesion refused to heal, in spite of the application of spirits of turpentine and various other household remedies. At the time of the examination this lesion was about the size of a dime, and was partially covered with a layer of disintegrated epidermis and stringy, adherent pus. Beneath this coating were masses of exuberant granulation tissue which bled easily, but were not painful to the touch. The surrounding skin was undermined with pus, but there was no areola of hyperemia. Extending up the ulnar side of the forearm and the inner side of the upper arm was a chain of cutaneous and subcutaneous abscesses, eleven in number. Two of these, both located near the wrist, had ulcerated through the epidermis and thick, brownish pus exuded when pressure was applied over the lesions. There was present no evidence of a coccic cellulitis, the glands were not involved, and there was practically no pain. Only the right hand and arm were affected. After employing antiseptics for a few days, Dr. Osborne concluded that the case was an unusual one of syphilis and placed the patient on mixed treatment. The lesions slowly healed, in the course of four or five weeks, leaving slight scars.

610 Commerce Building.

CONSERVATIVE SURGERY OF THE PELVIC ORGANS AND THE LOWER ABDOMINAL WALL *

FLOYD W. McRAE, M.D.
ATLANTA, GA.

It is not my purpose to attempt to present anything new, but rather to discuss end-results in pelvic surgery from the viewpoint of a practical man who has kept in exceptionally close touch with his cases, prior to and following surgical operations.

For fourteen years I did a very active general practice with a constantly increasing surgical element. For ten years now, I have limited my work to surgery and surgical consultations.

I reside within 200 miles of where I was born in a community of Scotch settlers as clannish as native Scots; I am of Scotch extraction, a member of perhaps the most prolific and ramifying family of all those Scotch pioneers. A great deal of my surgery has been done on these relatives and life-time friends, thus enabling me to follow up my cases.

Atlanta has been the field of my professional activities, her population nearly trebling during my residence

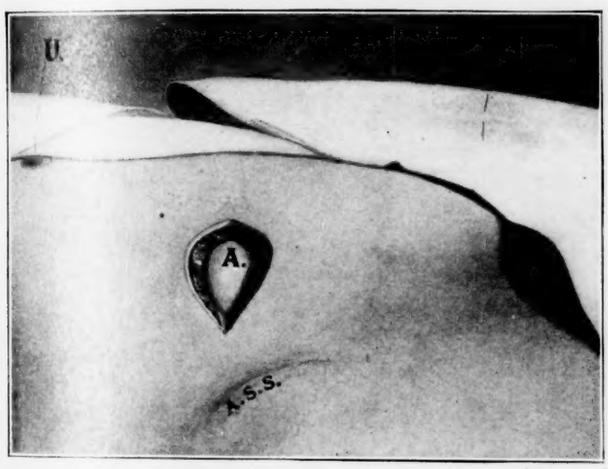


Fig. 1.—Initial incision in author's operation for appendicitis. A, aponeurosis; U, umbilicus; P, pubes; A. S. S., anterior superior spine.

there. As a general practitioner doing surgery, I knew intimately postsurgical results. I simply state these facts as explanatory.

On account of these unusual relations, I have been intensely sympathetic and individual in my surgery, forgetting sometimes, I fear, the general good of surgery, in the (to me) all-absorbing problems of the case in hand. What will enhance this individual's chances for recovery? What will promote his or her permanent, complete restoration to health and comfort? In this intensely personal application of surgery, I may have unwittingly failed in a measure to bear in mind always that obverse of the picture—the greatest good to the largest number.

Thus following up closely and keeping in touch with my postoperative cases, I have not infrequently been chagrined to find that while the surgical procedures were "successful," the patients were not cured; or there were sequelæ quite as disabling, often more disquieting, than the conditions for which the operations were done. This has been notably true of complete oophorectomies and complete salpingo-oophorectomies.

We have only to review our pelvic surgery—to follow up our cases—to find many instances in which surgery has proved harmful rather than helpful. This is not really the fault of surgery or of surgeons. New procedures must be worked out carefully, followed up conscientiously, and reports of results made faithfully, that we may know just what to expect.

The Battey and Tait operations, championed by many of the most brilliant and esteemed abdominal surgeons, initiated a "furor operativus" that cost hundreds of thousands of women their ovaries with the consequent disabilities and neuroses that so frequently follow

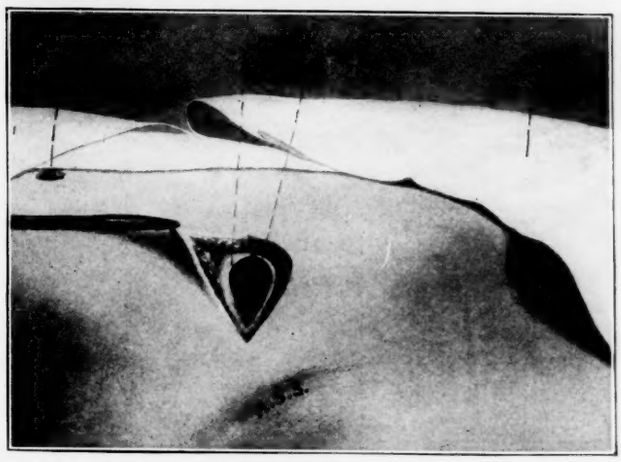


Fig. 2.—Second step in author's operation. I. O., internal oblique muscle. Other lettering same as in Figure 1.

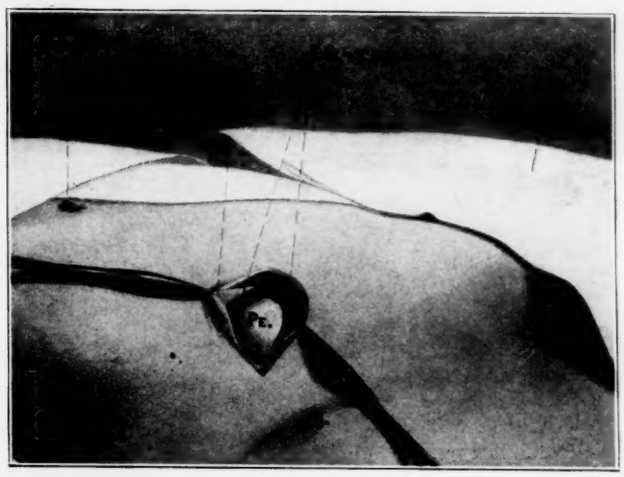


Fig. 3.—Third step. I. O.-T. M., internal oblique and transversalis muscles, separated and retracted; Pe., peritoneum. Other lettering same as in Figure 2.

oophorectomy. How many homes have thus been rendered childless, loveless and broken up by our former lack of knowledge of the internal secretions of these organs! My first laparotomy was done for tender, cystic ovaries, which I removed successfully, but with infinite disaster to my patient. Poor creature! For nearly twenty years I watched her wasting life. During this whole time she was a loyal patient. I did everything I knew; referred her to all kinds of specialists, only to get her back with that appealing look for help. She died eventually with cancer of the uterus. What influence, if any, my operation on her two decades ago,

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

which made her miserable, bore on her as an etiologic factor of her fatal disease, I do not know. But of one thing I am sure, and that is that if I had been more conservative her resisting powers would not have been lowered.

I shall deal with the subject of conservative surgery from an individual rather than from a collective standpoint.

Every patient submitting his or her case to the surgeon (in the absence of urgent necessity for immediate operation), has the right to expect and should receive an exhaustive examination for diagnosis, and thereupon

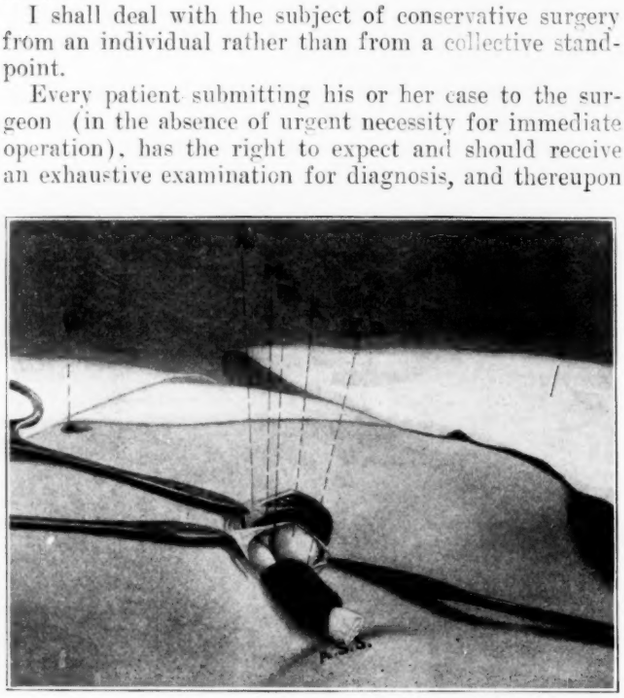


Fig. 4.—Fourth step. Cigaret drain (C. D.) inserted in outer angle of wound. M., muscles separated and retracted; I, intestine. Other lettering same as before.

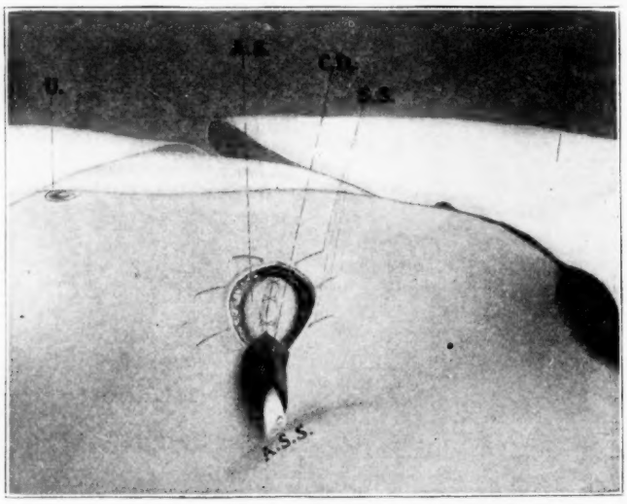


Fig. 5.—Fifth step. A. S., aponeurosis sutured; S. S., silkworm-gut sutures. Other lettering as before.

a mature prognosis after a carefully considered detailed history.

It is quite too much the vogue for operating surgeons, after a desultory history and hurried examination to make some such remark in the operating-room as—"there is something wrong in this abdomen. I will tell you what it is after I open up and see inside." Such remarks have a bad influence on medical students and young surgeons, tending to the far-too-prevalent practice of rushing patients to the operating-table to be opened up for general results. The general practitioner finds many of these patients returned to him surgical victims rather than surgical victories. Such work excused, if it did not warrant, the epigram, "furor operativus," made by a brilliant, lamented surgeon of international reputation in his presidential address before the last Atlanta meeting of the American Medical Association. Such work, in a measure, justifies the feeling on the part of some internists that they must stand between their patients and operating surgeons. We should not be satisfied to have our patients simply recover from operations. Surgery that does not benefit or cure the patient is harmful, lessening confidence in surgery and surgeons, and often deterring those with serious surgical conditions from submitting to necessary operations.

By conservative surgery I mean that type of surgery that aims at conserving tissues and functionating organs in whole or in part, when this can be done without undue hazard to the life of the individual.

Considering the subject as a whole, radical surgery is frequently the most conservative surgery. No surgeon could possibly believe more firmly, nor advise more earnestly, than do I, prompt interference in acute

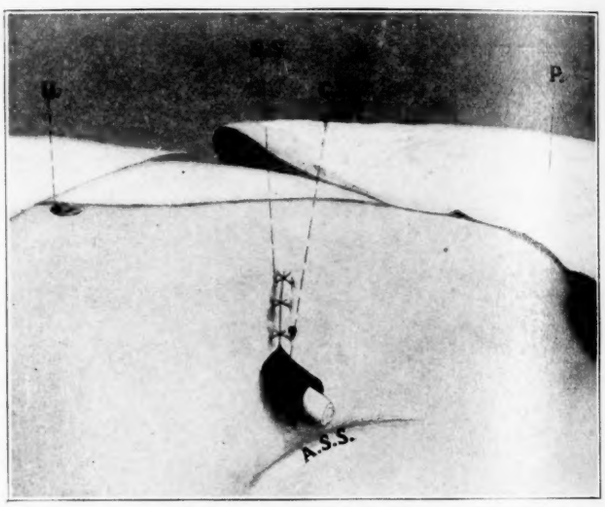


Fig. 6.—Operation completed. Silkworm-gut sutures tied.

appendicitis, acute obstruction of the bowels, perforation of the alimentary tract, penetrating wounds of the abdomen, etc. Delays under these, or like tragic conditions, to make hair-splitting diagnoses, are little short of criminal. Here it is the surgeon's duty, as stated by a distinguished southern surgeon, to "get into the abdomen as quickly as possible, do the essential work, and get out of the abdomen as quickly as possible." Where, however, there is nothing urgent, failure to consider seriously the individual from every viewpoint is equally reprehensible.

Neuroses, intestinal toxemias and parasites, visceral ptoses, as well as heart, lung and kidney conditions, should all receive careful consideration and be given due weight. Repeated examinations of the urine, examination of the stomach contents and feces, examination of the blood, *x*-ray examinations covering a period of from two to ten days, should be made. Two days may be sufficient; ten days is a period none too long to keep some of these patients under observation and treatment before resorting to surgery. In doubtful complicated conditions even weeks of observation may be necessary. Thus by a systematic plan of coordination and elimina-

tion, we may arrive at far more accurate diagnoses and give better advice as to treatment.

I began doing conservative work on the ovaries and tubes in September, 1903, impressed by the many hopeless and helpless wrecks following my own complete salpingo-oophorectomies, and similar wrecks following like operations done by other surgeons and gynecologists which came under my observation. At that time no conservative work was being done in Grady Hospital, our large city hospital, nor was there, so far as I was then aware, any being done in my vicinity. Prolapsed ovaries, cystic ovaries, were removed with their tubes. In acute pelvic infections and pus cases, the tubes and ovaries were also completely removed. Hysterectomies were frequently done in addition.

I have been largely influenced to bring these subjects before this Section for discussion by the recent articles on conservative surgery of the ovaries by Dr. J. O. Polak,[1] of New York, Dr. R. A. Barr, Nashville, Tenn., and Dr. James W. Cokenower, of Des Moines, Iowa, all of whom practically condemn conservative surgery of the ovaries and tubes. Their reasons as given are: fewer immediate cures, the large number of patients returning later for radical operations, after conservative operations have failed. The small percentage (5 per cent. to 10 per cent.) of women bearing children after conservative operations, seems, however, to be their chief argument.

My own experience differs materially from the experiences of these gentlemen in every particular. My observation of several hundred complete operations done in hospital and private practice, and later personal experience with 135 conservative operations on the ovaries and tubes, has satisfied me that the number of complete and satisfactory cures is larger following the conservative operation than following radical procedures. Some of the patients on whom conservative operations have been done return for later operations, conservative or radical, as indicated; just as many patients on whom radical operations have been done return later for the breaking up of adhesions, partial or complete intestinal obstruction, etc.

My conservative operations in married women have been followed by a fraction less than 16 per cent. of known pregnancies and safe deliveries of healthy children. I do not doubt that some of those who have passed from under my observation have also borne children. Most of my conservative operations, however, have been done on young women, and here I think the results have been even better than in married women. Artificial menopause has been prevented, the natural characteristics of the woman have also been preserved; they have retained their womanly traits and their womanliness. They have been preserved from that feeling of being set apart from their kind which comes to most of the women that I have known on whom radical operations have been done. I may have been peculiarly unfortunate in having these poor creatures appeal to me so frequently for help; but my inquiries among general practitioners, gynecologists, and neurologists, have confirmed my own experience. Almost without exception my own observation is confirmed by the general practitioners and female gynecologists, who have large opportunities for observation and intimate knowledge of these cases, making their observation especially valuable; and neurologists to whom these miserable creatures are referred as a last resort, to eke out their remaining days in abject suffering, despondency and disappointment. I have discussed this subject freely with Dr. Sawyer, our leading woman gynecologist and obstetrician, and have her consent to quote her experience, with reports of typical cases. I have also talked the matter over frequently and in detail with Dr. E. Bates Block, our leading neurologist, and his experience coincides almost exactly with that expresed above.

The argument that only 5 to 10 per cent. of pregnancies follow conservative operations, and therefore these operations should be condemned, seems to me to be not well supported, or based on sound fundamental facts and reasoning. When we consider the thousands and thousands of radical operations that have been done during the last twenty-five years, and the ever-increasing tendency towards race suicide, even this small percentage of homes preserved and children borne is no small argument.

As we work out these conservative operations more in detail, with better technic, a larger and larger percentage of pregnancies will follow.

There must always be a great difference between the results obtained in private practice amongst the better classes of people and the results obtained in large charity hospitals. A large percentage of these latter cases cannot be followed up, and their subsequent histories as to operations and pregnancies cannot be gathered with any degree of accuracy.

I am constrained to insert here the report of five cases from the pen of a woman physician, who was a nurse before she studied medicine. She says:

> Than that of the poor, miserable woman, undergoing the nervous changes following the entire removal of both ovaries, there can be, to me, no sadder state in life. An observation of these cases covering some seventeen years, many of them women whom I had known prior to operation, convinces me that their last state is worse than their first.
>
> Reviewing the history of a number of these women, who, in a vain hope of finding some relief, have sought me, I find the invariable and most marked symptom is that of despondency; sooner or later the feeling of utter hopelessness is theirs. Restlessness, discontent, inability to engage in former duties or pleasures, bitterness and fear of the future, together with loss of power to control the emotions, are always present. A scene of weeping is a part of every interview. The physical findings vary only slightly—a narrow vagina (frequently it is with difficulty that I introduce the examining finger, even in those who have borne children), a small cervix, which bleeds on the slightest touch, as does the vaginal mucosa; the uterine body is small and exquisitely tender. These examinations are always made with difficulty, provoking the most exaggerated nervous manifestations.
>
> CASE 1.—Miss M., aged 22, on whom I saw the operation done in January, 1895, came to me in the spring of 1904, nine years afterwards, with an appeal to do something to help the "unbearable nervousness" from which she suffered. She was despondent and altogether miserable. Her home life, she admitted, was all that it could be to make one happy, but she took no enjoyment in it. Examination showed the typical condition described.
>
> CASE 2.—Miss B., aged 21, operated on in September, 1896, of a cheerful, happy disposition, as I remembered her in girlhood, was so changed, when I again saw her in 1905, that I would not have recognized her as the same. She expressed herself as never having had one moment's freedom from pain and nervousness since the operation; she wished that she had died at the time. She had consulted various specialists, North and South, with no assurances of relief by operation or treatment. Examination showed the vagina so contracted that it was almost impossible to introduce the index-finger, a diminutive uterus so tender as to cause an outcry of pain on the slightest touch, and profuse bleeding from the gentlest manip-

1. Polak, John Osborn: Final Results in Conservative Surgery on the Ovaries, THE JOURNAL A. M. A., Oct. 22, 1909, p. 1382.

ulation. She is now a hopeless wreck, with the bitterest condemnation of the surgeon who did the operation.

CASE 3.—Mrs. C. had a double ovariotomy nine years previous to consulting me. At no time since the operation had she been so well as before, and at the time that I saw her she was a bed-ridden invalid. She complained of pain in every part of the body (with no disease of any organ that I could find), of wretchedness and despair. The trend was a lament that she was a burden to her husband and family, and wished she were dead. The atrophic vaginal and uterine changes were most marked. She underwent an operation some months ago for what the surgeon termed "adhesions," but says she is in no way benefited by it.

CASE 4.—Mrs. H., with a history of an operation done twelve years ago, presented herself, with symptoms similar to those of Mrs. C. She was a woman of unusual strength of character; her effort to overcome the train of nervous symptoms which have followed the operation has been of the strongest. She views the future without hope, but is trying to make the best of an empty life. And so I might tabulate the entire list, finding only the slightest variation in phases of nervousness or physical signs.

Surely these victims of mistaken judgment should invite a plea for conservative surgery on the ovary.

AUTHOR'S INCISION IN APPENDICITIS

Let me now direct your attention to my method of opening the abdomen for appendicitis, simply to place it on record. The hernias following late operations for acute suppurating and fulminant appendicitis are disabling, sometimes dangerous, and usually preventable.

May 10, 1903, in my one hundred and twelfth operation for appendicitis, I made my first transverse cut to reach a gangrenous appendix. It then seemed to me that such a cut would give better exposure, better drainage, less trauma, and leave the abdominal wall far less liable to subsequent hernial development. An experience covering seventy-six cases in late, neglected, acute appendiceal abscesses, in perforative and fulminant appendicitis, many with advanced spreading peritonitis, has abundantly demonstrated the feasibility of the operation, and has proved it to be the best incision in my hands for such cases. I do not advocate this incision in cases suitable for the McBurney gridiron operation, or those associated with pelvic pathologic conditions that should be dealt with at the same time.

I make a transverse cut well out in the flank through the skin and superficial fascia, buttonholing the aponeurosis; then separating the transverse fibers of the internal oblique and transversalis muscles I next make a transverse cut through the transversalis fascia and peritoneum. This incision, if made well to the outside, gives the very best possible drainage outlet in appendiceal cases. It is easily retracted, giving much more room and better exposure than does a lateral incision to the outside of, or through, the fibers of the right rectus muscle. While there is a direct opening through the whole abdominal wall, two muscle layers, the internal oblique and transversalis, are practically uninjured, the nerve and blood-supply little interfered with, lessening also the danger of inguinal hernia. Where complications are encountered, and still more room is needed, the incision may be extended to the median line, through the skin and superficial fascia, the internal oblique and transversalis muscles separated to the edge of the rectus, the sheath of the rectus cut transversely and the edge of that muscle lifted up. The posterior sheath may also be cut if necessary. The advantages of the operation are: facility, better drainage, better exposure, protection against ventral hernia, and less danger of inguinal hernia following.

I have followed up many of my transverse operations, and in all of the cases observed have found a good solid scar. Certainly some hernias will result. That I do not advocate or employ the transverse incision as a routine, is evidenced by the fact that I have performed this operation only 76 times in the last 567 appendectomies.

ABSTRACT OF DISCUSSION

DR. ALEXANDER HUGH FERGUSON, Chicago: The end-result of operating on prolapsed ovaries and on small cysts in the ovaries has, no doubt, been pretty well decided in the experience of almost every surgeon of note. This work does not entirely belong to the gynecologist; surgeons deserve a great deal of credit. I have not for its own sake removed a prolapsed ovary in twenty years. I have removed small and large cysts from ovaries in hundreds of cases, but I have always conserved all the ovarian tissue I could, just as Dr. McRae has. I have done this not merely to favor the propagation of the race, but to maintain the mental equilibrium and happiness of the patient. These cases can be divided into two classes. First, there are the patients who are not nervous primarily, but who have cystic and prolapsed ovaries. One cannot class them with the neurotics; however, if allowed to continue in that state they will become nervous. If those ovaries and tubes are removed simply because they are displaced and a little cystic, these patients can be converted into hopeless neurasthenics. Then there is a second class that comes before us prominently to-day. What shall we do with a neurasthenic patient who is suffering with pelvic tenderness, due to prolapse, uterine disease or cystic ovaries? Shall we operate on these patients? Why not? If we do not operate the condition becomes profound and the patient may become insane. The majority become invalids. If we remove the pathologic condition from the pelvis, we remove a certain amount of the irritation that was interfering with the well-being of the patient or that caused the displacement of the ovary, etc. Shortening the ligaments, removing the cysts and making the pelvis as nearly normal as possible, will not interfere with the nerves of the patient, nor with her mentality. Some surgeons have stated that no operation should be done on a neurasthenic. That is a mistake. Even the insane claim our honest attention, and removal of diseased tissues will often better the patient's mental condition. Then we come to the very acute cases, in which surgery has not often been practiced. A young woman became pregnant, and fearing discovery, because she had been married secretly, she went to an abortionist. She developed acute pyosalpinx, with a temperature of 105 F. I opened the Douglas' cul-de-sac and found pus there and also a double pyosalpinx. I then opened the abdomen and found the appendix involved secondarily. What would you do? Ablate these tubes? No! I split the fundus of the uterus transversely and drained the pus into the uterus. The fimbriated ends of the tubes were opened. In five weeks this young woman left the hospital apparently in an excellent condition.

DR. J. M. BALDY, Philadelphia: It seems a pity that surgeons should go to the extreme on any surgical subject in this day, and especially when it is a question of pelvic surgery, pure and simple. To acknowledge oneself as always doing conservative surgery or as always doing radical surgery, is a tacit acknowledgement of mental immaturity. A great deal is said about conserving the pelvic organs, and much is said about complete hysterectomy and the removal of everything, but very little is said about a very essential feature, one regarding which all thorough surgeons and gynecologists agree, and that is to make a proper diagnosis, and to know beforehand whether any operation should be done. Therein lies the great evil, the great harm of all this work. More patients are injured, not because they have the ovaries and tubes removed, or because any conservative surgery is done, but because they were operated on at all when operation was not indicated. They were simply neurasthenics, patients who belonged to the neurologist, who needed common-

sense, outdoor life, or anything else you choose, except to fall into the hands of the surgeon. That is a lesson everyone of us must learn. It is a fact that where you find a young community of young surgeons, that is, surgeons young in surgery, and where you find that other class of men, the so-called general surgeons, men who dabble in everything—surgery, gynecology and what not, you will find that many unnecessary operations are done; that is, many patients are operated on when what they really need is medical care.

DR. HYMAN M. FOLKES, Biloxi, Miss.: The diagnosis is the essential feature in these cases. As Dr. Baldy well put it, every sensible man, every man of large experience, will know when to operate and what to do after he has entered the abdominal cavity. Practically 50 per cent. of these cases are not operative cases. Dr. McRae brought out a point that few surgeons have realized to any great extent, and that is the end-results of injudicious surgical procedures. I have had many patients who have been operated on times without number. I remember one woman, aged 30, who had been subjected to sixteen operations, and she was in as bad a condition after the sixteenth operation as she was before the first, if not worse. The younger these women are when they are robbed of their ovaries, the worse off they are in every respect; I mean women who are operated on injudiciously. Every sensible person knows that when there exists in the abdomen any condition requiring radical surgery, it should be done, regardless of end-results. One cannot stop to consider the patient from the neurologic standpoint; she must be considered from the surgical standpoint exclusively. I recall a young woman of 20, who had both ovaries removed at the age of 18, and every 20 or 30 days she had the most distressing symptoms. The urine output was as low as 6 ounces for the 24 hours, and the girl was almost blind. There was at no time any condition like nephritis. Except for the reduced quantity, the urine was entirely negative, so far as any involvement of the kidneys was concerned. I could not regard the case as anything other than a toxemia. Relative to these end-results, I have consulted many gynecologists, but they were averse to saying anything. For this especial case, I suggested ovarian transplantation, which was declined. Later the uterus was removed and the woman recovered. I believe that when it is necessary to remove both ovaries, it is well to take out the uterus at the same time. Undoubtedly, there is an ovarian secretion, but I do not see how reflex irritation from the uterus could bring about such a mental condition as was present in this patient.

DR. L. F. SCHMAUSS, Alexandria, Ind.: One will more often be disappointed in doing conservative surgery than in doing radical surgery. It all depends on what we mean by so-called radical or conservative surgery. Some men are said to be radical when they remove everything that is diseased. That is not radical; it is simply a thorough and complete, a conservative operation, and these are the operations which give the best results, so far as the patients are concerned. It would be well if all cases would turn out as Dr. McRae has reported, but a surgeon must expect to be frequently disappointed. Many patients, if not completely relieved at the first operation, will not submit to a second, and will continue a life of chronic invalidism. Therefore, one can err as much on the side of "conservatism" as on the side of "radicalism." While examining ovaries and tubes before deciding what to do, the physician must be careful how he handles these organs, in order to avoid irritating them, causing the lighting up of old inflammation, cyst formation, etc.

DR. JOHN C. MURPHY, St. Louis: This question of conservative surgery in the pelvis requires a broader and more varied experience on the part of the surgeon than does any other kind of surgery. If the surgeon is confronted with a condition which admits of no delay, it is important that he make up his mind quickly. In dealing with pelvic lesions, speaking from the standpoint of the gynecologist, I frequently see cases in which so-called conservative surgery has been done, and in which the work has been very incomplete, so that the patients have had to be subjected to unnecessary second operations. When the abdomen is once opened, no matter for what condition, the surgeon should have a sufficient knowledge of pathology to recognize what should be done. Unfortunately, however, some men have limited mentality, although possessed of some mechanical ingenuity. They take out ovaries and tubes, and frequently leave an infected uterus behind. And they think they are doing conservative surgery. I have had occasion to see numerous operations performed that were technically perfect, but the operator seemed to lack the training of the pathologist. I have seen surgeons operate on clinic patients whom they had not seen up to the time of their coming to the table. Someone else made the diagnosis, and asked the surgeon to operate for a certain condition. This certainly is to the detriment of the patient and not to the credit of the surgeon. Sometimes it is conservative to be radical. We must learn to differentiate between these conditions. There are thousands of women who are suffering from the results of incomplete surgery in the pelvis, which deters other sufferers from seeking the relief they might otherwise obtain. The surgeon should not so readily accept the sometimes incomplete diagnosis of his medical colleague, but should combine the science of the diagnostician with the art of the operator. The only conservatism worthy of consideration is that which puts the patient in the best possible condition to enjoy the pleasure of living.

DR. FLOYD W. MCRAE, Atlanta, Ga.: I agree with Dr. Baldy, that surgeons, as well as gynecologists, ought to be diagnosticians. I do not believe that there is any real antagonism between surgeons and gynecologists. There is not a good gynecologist who is not also a good surgeon, and any good surgeon is capable of doing most gynecologic operations. I do not believe that Dr. Baldy, or any other surgeon of experience, operates in these medical cases to which I referred. One of the principal points in my paper was that we must make a diagnosis. Dr. Murphy referred to one point of which I spoke, and that is operating on patients without making a previous examination. We should not go into these cases blindly, because that is when and where we make mistakes. Without doubt, many operations are done radically when conservative procedures would have been better. Often infections in the pelvis have practically jugulated themselves. We can do conservative surgery in these infective cases, and we can do much to preserve to the woman her womanliness. I have yet to see a young woman, who has had tubes, ovaries and uterus removed, and who is satisfied with her condition after five or six years. The younger the woman the more important it is for us to conserve these organs, or even to transplant at least a portion of an ovary into the uterus, saving enough of the ovary to prevent an artificial menopause. False deductions are made from improper diagnoses, improper appreciation of pathology, and lack of care in doing this work. I would rather operate twice or thrice on one patient and preserve her womanliness than do a complete operation and make of her one of those hapless individuals described in my paper.

A New Method for the Differentiation of Bacterial Species.—In a second report on the influence of bacterial endotoxins on phagocytosis (*Nature*, Nov. 24, 1910), L. S. Dudgeon, P. N. Panton and H. A. F. Wilson say they have failed to demonstrate in any of their experiments any action of the endotoxic substances on the leukocytes; experiments of allowing bacteria to be exposed to the action of specific endotoxic substances furnished similar results. They confirm those published in their first communication that the phagocytic result was dependent on the interaction of endotoxin of serum. They have found, in the case of normal serum, that the amount of phagocytosis permitted when bacteria and endotoxin interact is not related to the amount of hemolytic complement present. The action of the endotoxin seems to be specific even with such closely related organisms as the typhoid and paratyphoid types and they suggest that this method may be employed for the differentiation of bacterial species. The amount of endotoxin has been shown to be strongly hemostabile.

THE DIAGNOSIS AND TREATMENT OF CHRONIC INTESTINAL INDIGESTION IN CHILDREN *

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This paper relates exclusively to chronic intestinal indigestion in children beyond the second year of life. It is not our intention to go into a detailed description of the condition, but rather to point out certain of its features which are of special interest and importance. Its etiology, as is well known, includes bad conditions of hygiene, food of poor quality, improperly prepared foods, overeating, eating at improper intervals, too rapid eating, insufficient mastication, defective teeth, exercise too soon after eating, fatigue, insufficient hours of rest, educational over-work, nervous influences, etc. Any and all of these conditions may result in disturbances of the gastro-intestinal tract in children who are primarily entirely normal and eventually bring about the form of disturbed digestion under consideration.

In addition to the causes mentioned it must be borne in mind that many children, either as a result of inheritance, previous acute illness or environment, suffer from constitutional debility which predisposes them to diseases of the gastro-intestinal tract.

While chronic disorders of the intestinal tract may be secondary to disturbances of the gastric digestion or the product of recurring attacks of acute gastro-intestinal disturbance, one must not lose sight of the fact that in a large percentage, if not the majority of cases, the condition is primary, and it is in this group of cases, which eventually result in the more pronounced types, that the earlier symptoms are frequently overlooked.

In the routine examination of the stools of apparently normal children, foul-smelling feces, which may or may not contain particles of undigested food, are a common finding. With these results as a guide a closer examination of the donor will often result in the establishment of other symptoms of disturbance of the intestinal digestion of which the child has never complained and which have passed entirely unrecognized.

Not infrequently, however, this condition of the stools is the only evidence one can discover, and it may continue indefinitely as the only symptom. It is well, therefore, to remember that chronic indigestion may and usually does persist for many weeks or months in a mild form, and at this stage its recognition is especially important, as therapeutic measures are much more promptly effective when applied early than in the later course of the disease.

The only satisfactory way of making the diagnosis of these milder forms, as has been indicated by the foregoing statements, is by an examination of the stools. Questioning the parents or child as to the regularity in movement of the bowels or condition of the stools is fruitless. In the first place, comparatively few parents give answers based on observation. They may insist on the child going to the toilet each day and the child may respond and have a movement, which is reported to the parent as satisfactory; but it is manifestly impossible that the child should know the color, odor and general appearance of a normal stool—as a matter of fact, there are few adults who do—consequently the statements of the parent or child cannot be accepted as indicating the actual conditions.

Quite recently one of us referred to a fellow-practitioner, a highly intelligent adult, who was suffering from insomnia and an associated group of symptoms which are commonly included under hypochondriasis or neurasthenia. The patient stated that he had been having a normal stool each day immediately after breakfast since childhood. The stool, which was sent to the laboratory for examination, was dark-green in color; macroscopically it contained undigested vegetable and meat fiber and the odor was indescribably bad. When the patient was told the character of the stool he remarked that he knew the odor was bad, but he supposed, since this had been the odor of his stools for many years, that it was normal. This serves as an illustration of the unreliability of the patients' statements as to the character of the stools.

It is manifest, therefore, that if satisfactory data are to be obtained the stools must be examined by the physician, and not on one occasion only, but several times at intervals of some days, since it is not uncommon for the child to occasionally have fairly normal stools, even in long-standing cases.

In order to appreciate one's findings it is necessary to have some idea of the appearance of normal feces. While the consistence and form may vary within certain limits, according to the character of the diet, we consider a stool to be normal when it is of faintly alkaline, amphoteric or neutral reaction, well-formed, light or medium brown in color, and has only a slight and not a noteworthy offensive fecal odor. It should show no evidences of fermentation and only slight traces of mucus should be present. Microscopically a normal stool shows, besides vegetable cells, poorly striated muscle fibers, leukocytes, bacteria, etc., no starch granules, and, if any, only a few neutral fat globules, soaps or crystals.

In intestinal indigestion the stools show evidences of abnormality depending on the particular element in the diet which is being less satisfactorily disposed of. Macroscopically the stool may be unformed or only partly formed, whitish, light brown, greenish or dark brown in color, and show an increase in offensiveness referable and in proportion to the increase of the putrefactive processes. It may be semi-solid, soft or mushy, or, on the other hand, hard and dry. It may contain undigested particles of muscle or vegetable tissue, show varying degrees of fermentation and varying amounts of mucus. Microscopically the stool may show large numbers of vegetable cells, fairly well-striated muscle fibers, starch granules, and, in the cases due to disturbances of the fat digestion, excessive quantities of neutral fat, soaps or crystals.

In the cases with marked abdominal symptoms the stools may show an exaggeration of the foregoing picture. The consistence may be very loose, or watery, and the fermentation marked enough to produce almost constant bubbling on the surface of the stool and the odor offensive in the extreme.

It is well to remember one point that has been referred to, namely, that the stools are often continuously offensive without containing particles of undigested food. This condition may not necessarily indicate a disturbance of the digestion of such character as we are considering, but may be the product of practically any

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condition which will bring about a general lowering of nutrition, such as chronic infection through the lymphatic tissues of the nasopharynx or the faucial tonsils. In consequence there evidently occurs in the intestinal tract a diminution in resistance to the multiplication of the putrefactive bacteria without any material interference with its digestive function.

A careful study of the urine is of value in directing one's attention to disturbed intestinal digestion when the stools show no evidences of abnormality. The general characteristics of the urine as a rule show no changes, and, although it has been stated that there is an increase in albumin, this has only occasionally been true of the cases observed by us. We can conceive that certain changes might be produced in the functionating power of the kidneys, especially in the long-standing cases, which would result in an increased elimination of albumin. More commonly indican, phenol and urobilinogen are present in amounts depending on the degree of the intestinal putrefaction. These products may appear either alone or in combination, and, though usually associated with disturbances of the protein digestion, are sometimes present when the putrefactive process depends on other causes.

The manifestations aside from the stools may vary from practically no subjective symptoms to the most extreme clinical picture that one can depict. The symptoms are by no means restricted to the intestinal tract; in fact, the absence or mildness of the abdominal symptoms may be so striking as entirely to obscure the actual seat of the primary disturbance. The cardiovascular and nervous systems sometimes furnish the bulk of the symptoms; coldness and blueness of the extremities, fits of pallor, even amounting to syncope at times, palpitation and irregularity of the heart's action are common symptoms on the part of the circulation, and, together with the wasting, which in the long-standing cases is constant, there may be considerable anemia, which is usually, however, more apparent than real.

On the part of the nervous system there is no limit to the manifestations, and it is to these that we wish particularly to draw attention. The most common nervous phenomena are restless sleep, muttering during sleep, night terrors and sometimes insomnia. There is a general condition of restlessness and irritability and inability to concentration of effort, especially mental effort. These children are apt to do badly in their studies. They frequently drift into a clinical picture which in the adult would be defined as neurasthenia, and after this condition of nervous unbalance has been well developed convulsive seizures sometimes occur.

Not once but many times we have had these cases come under our observation, with the diagnosis of epilepsy and a hopeless prognosis as to recovery, and it is this fact more than any other which has stimulated us to present this paper, because we believe that the convulsive seizures occurring in this condition are frequently, if neglected, the beginning point of what later develops into so-called epilepsy. It has been our experience that in these neglected cases the history has shown a tendency to increasing frequency of the convulsive seizures; in other words, each convulsive seizure has rendered the nervous system more unstable and, therefore, more susceptible to insults from the toxic products which are constantly forming. The result is that the habit of fits becomes well established and eventually the resistance is so slight that the subject is to all intents and purposes an epileptic.

The relationship between chronic disturbances of the intestinal digestion and convulsive seizures cannot be too strongly emphasized. It is almost criminal to assume that, because any child has had a series of convulsive seizures lasting over a period of months or even a year, it is necessarily epileptic. Such an assumption is a most liberal contribution to the production of epilepsy.

The proper attitude to take toward a child with such a history is that there is a tangible cause for the attacks, which must be searched for through every possible avenue until it is determined and eradicated. The frequency with which it can be traced to these chronic conditions of the intestinal tract will be surprising and enlightening.

The fact that certain children suffering from chronic disturbances of the intestinal tract show more marked nervous phenomena than others is difficult to explain. The relationship of these symptoms to inherited weakness of the nervous system or to inherited tendencies which result in nervous instability is very commonly emphasized. We find certain writers describing under the headings of neurasthenia, nervousness, lithemia, chronic gastro-intestinal disturbances, chronic intestinal indigestion, constipation, etc., practically the same varied group of nervous symptoms. While neurasthenia is not accepted by some pediatrists as occurring in early life, it is by others, and, as to etiology, it is usually defined as hereditary and acquired. We are probably all willing to admit that we are not born into the world endowed with the same amount of nervous resistance. Unquestionably each individual differs from others in this respect, and some have very little nervous resistance. These latter are the ones defined as the hereditary neurasthenics. Their nervous force is so limited that the slightest variation from the normal routine of life results in the production of nervous symptoms; indeed, it is said that these may occur without an exciting cause. These cases are described by some pediatrists as of easy recognition even in early infancy through the occurrence of such reflex phenomena as abnormal tendency to fright (as starting on the occurrence of any sudden noise), abnormally light sleep, continuous crying day and night, etc.

Acquired neurasthenia is usually attributed to overstrain, either mental or physical, and to certain emotions. These latter causes are rarely active in children and, therefore, one must assume that in early life the large majority of instances of neurasthenia are manifestations of a hereditary weakness unless certain other factors, not active in adult life, are capable of producing neurasthenia in children.

It seems to us that this group of nervous symptoms which is common to so many disorders in early life should be classified either as neurasthenia caused by the conditions with which they are associated or that the term "neurasthenia" should be restricted to an exceedingly small group of cases or eliminated entirely from the category of diseases of child life. We incline to this latter view because we believe that the instances in which these nervous manifestations exist, apart from all exciting causes, are practically unknown. They may be dependent on any one of a number, such as bad environment, adenoids and enlarged tonsils, defects in vision, and the chronic disturbances of the gastro-intestinal tract. Unquestionably this latter group is more largely responsible for the nervous phenomena of children than any of the others, and this is especially true of chronic intestinal indigestion. In certain children the nervous

system may be especially susceptible because of hereditary deficiency; in others the prolonged action of toxic products on the nerve centers results in an acquired susceptibility with the production of the same phenomena.

In either event the fact remains that in chronic intestinal indigestion there is a large group of nervous symptoms which are dependent on the toxic substances, which are absorbed or retained in consequence of the abnormal conditions of the intestinal tract—a fact which we daily demonstrate by bringing them under complete control by correcting the intestinal condition.

The important point to bear in mind is this causative relationship, since there is grave danger of accepting the nervous symptoms as the disease without endeavoring to determine the primary condition and relieving it. Probably all of us have been inclined to look on this condition of nervousness associated with chronic intestinal indigestion in early life as the internist has looked on neurasthenia in the adult, viz., as often more or less hopeless from the therapeutic standpoint. This attitude has made the handling of these cases difficult.

We have shown a tendency to neglect them. The bad results of such neglect are far-reaching. The longer the condition lasts the more numerous and fixed the symptoms become. These children often pass out of childhood into early youth and on up to adult life, becoming more fixed in their ill health and correspondingly more neglected as the treatment of their condition becomes more difficult. They swell the number of so-called cranks, hypochondriacs, neurasthenics and hysterics among adults, a large percentage of whom could have been given comfortable, useful lives if the true nature of their condition had been recognized in childhood.

Aside from the symptoms referred to these cases of chronic intestinal indigestion sometimes manifest another group of symptoms which may be misleading from the standpoint of diagnosis.

Distention of the abdomen does not develop in all instances, but in the cases in which the nutrition of the muscles suffers the abdomen may be greatly distended. The thinning out of the abdominal muscles lessens the support to the abdominal contents; this lack of support, together with the weakening of the intestinal wall and the putrefactive processes within the intestine, brings about a ballooning of the abdomen which may become extreme; when vomiting of toxic origin, which may persist for some days, is added to these symptoms the clinical picture of tuberculous peritonitis is strongly suggested and sometimes eliminated with considerable difficulty, especially the fibrous form. The only satisfactory evidence on which peritonitis can be excluded is the history of the case, continuous observation over a period of weeks, the absence of the characteristic doughy or infiltrated feeling of tuberculous peritonitis, and the absence of masses within the abdomen, signs which may, however, be entirely lacking.

There is one other symptom to which we wish to call attention, and that is a peculiar form of dyspnea which we have somewhere seen aptly described as "sighing respiration." This symptom is most marked after meals and especially after the evening meal or when food is taken immediately after severe exercise. It is associated with a feeling of epigastric distress or pressure and consists of inability to get a sensation of satisfaction from respiratory effort. It is usually associated with increased distention of the abdomen, especially the distention of rather sudden origin. The child will take a full deep inspiration, which is followed by a sighing expiration. It sometimes becomes almost continuous for a period of days and in older children we have seen it produce considerable alarm. Exercise will sometimes increase it, but generally it lessens abruptly or entirely disappears when the attention is distracted by occupation. On what this symptom depends we are uncertain. Whilst usually associated with increase in the abdominal distention, the latter rarely seems sufficient to mechanically interfere with the proper function of the intrathoracic organs. It would seem to be more properly attributable to some toxic effect on the centers of respiration and probably always exaggerated by psychic influences.

Edsall has suggested that since in gastro-intestinal conditions marked acidosis is not uncommon it is entirely possible that a "subacidosis" may overstimulate the respiratory centers sufficiently to produce this symptom.

Haldane and Priestly have shown that carbon dioxid is the normal stimulant to the respiratory center. It has also been shown that other acids may have the same effect. Therefore it is not a lack of oxygen but the presence of carbon dioxid and other acids that produces respiratory effort.

Beddard, Pembrey and Spriggs have shown that in the coma of diabetics carbon dioxid tension may not be increased and that the blood can still absorb carbon dioxid freely, but that slightly excessive amounts of carbon dioxid in the respired air cause great excess of dyspnea.

Since this dyspnea is very often controlled by alkalies, and since acid intoxication is known to exist in diabetic coma, the authors referred to conclude that the organic acids produce the Kussmaul breathing by acting as respiratory stimulants.

In the light of these conclusions, and because of the striking similarity between the sighing respiration of intestinal indigestion and the Kussmaul breathing, the suggestion of Edsall would seem to provide the correct explanation.

TREATMENT

Coming now to the treatment of chronic intestinal indigestion, we would say that it divides itself into the following heads:

1. Absolute control of the patient—which means the full cooperation of the mother and nurse.
2. Hygienic treatment.
3. Dietetic treatment.
4. Medicinal treatment.

Unless one has the full assistance of the caretakers in carrying out measures of treatment, failure is a foregone conclusion. The first step in the treatment, therefore, consists in securing such cooperation. This can usually be done by a full explanation of the nature of the disease, its chronicity, the dire results which will inevitably follow neglect of the condition, by placing of a large share of the responsibility of treatment on the mother or nurse, where it rightly belongs, by the promise of cure if they cooperate, and by making them understand in the beginning that the treatment must be continued not over days or weeks, but months, and that drugs will be but a small factor in accomplishing results.

If the confidence of the attendants is thus obtained, the most important feature in the treatment is accomplished. In the children of the poor and ignorant, seen in the hospital clinics, one can obtain better results—in fact, one might say that the only way in which one can get thoroughly satisfactory results is—by placing them

in the wards of the hospital for several weeks, as the conditions necessary for treatment cannot be secured in their homes.

Patients of this class unfortunately will only too often relapse after they have returned to their home environment. Much can be accomplished with such patients, however, by following them up in their homes through the medium of social workers or visiting nurses.

Hygienic measures are very important. Life in the open air, for its stimulating effect on the circulation and general toning effect, must be insisted on, and the sleeping-rooms must be cool and ventilated through wide-open windows. Properly regulated exercise is important, but this should be largely in the open air and always short of fatigue. Children must be required to eat slowly and masticate their food thoroughly, the common habit of bolting food to get away to school or to games being one of the causes of this condition. A period of rest should intervene between the taking of food and indulgence in active exercise. Very little, if any, physical exercise should be permitted after the evening meal. Long hours of sleep obtained by early retiring are essential.

The skin of these children is usually dry and inactive. It must be stimulated to do its work as an organ of elimination by the use of daily baths, rubbing, and inunctions, preferably with olive oil.

The kidneys must be kept active by the free use of water, which will also contribute to the lessening of constipation when it exists. Regularity in the evacuation of the bowels is necessary, especially in the presence of constipation. The child must be guarded against too close consideration of its symptoms, a result which is often brought about by undue anxiety on the part of the parents. Its environments must be cheerful and free of gloom. It must be relieved from all occupations which are depressing, especially from overwork in school.

Defective conditions in the teeth must be corrected and disturbing adenoids or tonsils removed, but only after the treatment has been continued long enough to bring about some improvement in the general health, and then by quick operations.

The nature of the diet depends to a large extent on the character of the indigestion. This can only be determined, as has been previously pointed out, by a careful study of the stools. If any one element of the diet has been badly handled, it must be withdrawn from the dietary, temporarily at least. Generally speaking such patients will do better in the beginning on a very much restricted diet, restricted even beyond the caloric needs in the individual case. One of the commonest errors in the treatment is the tendency to overcome the poor nutrition by full feeding. Obviously such a course is comparable only to adding fuel to the flames. These children are already the victims of too much food, and what their digestions need is not increased work, but rest. This can usually be most satisfactorily accomplished by the administration of a milk diet in some form. Where fats are badly handled, it is sometimes necessary to use diluted or even fat-free milks, and in some cases properly prepared buttermilk is useful. The milk diet should be continued until the stools give evidence of satisfactory digestion, after which the diet may be gradually extended, studying the stools the while and bearing in mind the elements in the food which have been poorly disposed of.

Usually the diet can be gradually advanced until a general well-rounded diet equal to the needs of the individual child has been reached. The heaviest meal should be given in the middle of the day, and the evening meal should be very light, as these children rarely sleep quietly on a full stomach.

It seems almost needless to say that all foods of recognized indigestibility should be permanently excluded and that the pernicious habit of eating between meals should be forbidden. Tea and coffee and other unnecessary and disturbing substances must follow the same course.

The use of drugs in this condition represents the least important part of the treatment. There is no specific, and, therefore, whatever drugs are given must be directed to the relief of certain symptoms.

We have used the so-called intestinal antiseptics for the control of putrefactive processes, but with entirely negative results. In the beginning of treatment and occasionally thereafter, a course of calomel followed by colonic irrigation will do much to relieve this feature of the disease. The intestinal washings seem especially effective in the cases with loose, watery, foul-smelling stools.

For the frequently associated constipation, one need rarely resort to the use of drugs. The free use of water on rising, evacuation of the bowels immediately after the morning meal, together with properly applied abdominal massage, and later the free use of green vegetables and laxative fruits, will invariably control this symptom.

As a temporary measure, we prefer olive oil enemas and non-irritant suppositories to laxative drugs. In the emaciated patients with marked abdominal distention, temporary mechanical support to the abdominal wall, together with muscle exercises directed to improvement in the tone of the abdominal muscles will contribute to the relief of constipation.

The bitter tonics, which are given more for their toning effect on the gastric mucosa than for their general effect, are the only tonics which are indicated. In short, if the conditions which are active in the causation of the disease can be controlled in the manner indicated under the preceding headings, the clinical picture will usually clear up without the necessity of drugs.

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ABSTRACT OF DISCUSSION

DR. H. L. COIT, Newark, N. J.: I have seen a number of cases that correspond to this clinical picture, and it is well to remember that many cases of so-called epilepsy are amenable to treatment. Most of the cases I have seen have been referred to me by physicians who thought they had epilepsy to deal with. Physicians are too ready to use medicine in treatment of intestinal indigestion in children, without proper attention to the diet. I think we should study these cases carefully and question the mother closely, in order to determine the dietetic errors. In the treatment, an important part is the correction of the diet. It may be that milk is used with red meats, or milk is used at breakfast with fruit and sugar. In addition we find over-feeding the rule, with the consequent putrefactive intestinal decomposition. In these cases there are restlessness, sleeplessness, indicanuria, fits of uncontrollable anger and foul-smelling stools. We cannot remove the results of putrefaction with carbohydrate diet alone, nor with calomel, or castor oil, but I think that we can do it by the use of bichlorid of mercury. Corrosive sublimate was abandoned by the surgeon because it became an albuminate which was insoluble, and the same is true when given by the mouth, but when it is given with hydrochloric acid it probably reaches the intestine, although it may there be changed into some other salt which finally alters the malodorous character of the intestinal contents. It should be given with the tinc-

ture of the chlorid of iron and with considerable glycerin an hour before the ingestion of food in small quantities.

DR. CHARLES GILMORE KERLEY, New York: I agree with everything Dr. Hamill has said, but I want to emphasize one point that I think he did not emphasize sufficiently, and that is, the matter of rest in the type of child he discusses. All of the lower animals lie down and sleep or take a rest after a full meal if they have an opportunity, and their digestive function is carried on better. When an animal has to work after a full meal, the digestion and assimilation are not so good. This has been demonstrated time and again. We all know how much exercise is taken by children, especially children of school age. The amount of energy expended in their work is tremendous, and the energy that is expended in play cannot be utilized in the digestion of food. When we have wasted energy in a child we have invariably indigestion, malassimilation, malnutrition and neurasthenia. Keep these children in bed in the morning, and let them have their breakfast in bed and give them a modified rest-cure. Then let them run about and play like normal children until luncheon in the middle of the day. Then have them rest again for an hour and a half and then allow them to run about until 6 p. m., when their evening meal is taken, and then to bed. In that way the child gets all of the rest required and he conserves his vitality for the processes of assimilation and growth. If we let these children lead a child's life and see that they get sufficient rest, they will not get into the condition described by Dr. Hamill. One of our greatest errors in the management of young children is in permitting the extraordinary amount of work they do from morning until evening. If you don't believe that, take one of your own children and weigh him, and then give him this rest and weigh him at the end of a month, and you will find that the child will gain a pound or more.

DR. L. T. ROYSTER, Norfolk, Va.: Has Dr. Hamill made any observation at all in the matter of temperature during the convulsive seizures in the class of cases he mentions? Does he consider the temperature, either positive or negative, in any way suggestive of the diagnosis between that condition and epilepsy? I have asked a number of neurologists in this country that question and none of them seems to have thought of it to the extent of making an observation.

DR. H. M. MCCLANAHAN, Omaha: The valuable thought in this paper to me was the possibility of intestinal indigestion and consequent toxemia leading to epilepsy. I have in mind a little girl who had repeated convulsions as often as once a week. She had chronic intestinal indigestion of the mucous type. After following out the course of treatment suggested by Dr. Hamill that child has absolutely recovered and more than six months have elapsed since a convulsion occurred. I am thoroughly convinced that, though the trouble was not true epilepsy, it was leading to epilepsy; and I am convinced that the convulsions were due to some toxins in the blood from the intestinal putrefaction. I believe more than most of you in the value of drugs, and I hope that I shall never become a therapeutic nihilist any more than I am a social nihilist, but I think that when the mother is given a drug to administer in these cases she is far more apt to carry out your treatment than if you depend absolutely on hygienic treatment. In the presence of constipation, especially the mucous type, the use of phosphate of soda is of value, although its value is not great compared with that of rest and a correction of the diet.

DR. E. E. GRAHAM, Philadelphia: In considering the nervous symptoms Dr. Hamill speaks of, we should not lose sight of the fact that a convulsive seizure in a child is brought about by an entirely different cause from a convulsive seizure in an adult. In children the convulsion is commonly of reflex origin, while in the adult it is commonly the result of some organic disease of the nervous system. This only adds force to the statement that chronic gastro-intestinal disease may originate and produce epilepsy in the adult. The probability of convulsions due to brain injury in an adult is very remote, while it is very common in children. For many years I have made a study of the cases in which convulsions developed in infancy, and that study has proved to my mind conclusively that the young child who has a convulsion is very commonly the one who later develops epilepsy, and that probably the convulsion, due to gastro-intestinal intoxication, is the origin of the late epilepsy. In other words, a certain amount of damage to a child's nervous system predisposes it to epilepsy. Any condition that is chronic for months or years and predisposes the child to convulsions certainly establishes a future condition that will predispose that individual to epilepsy. This paper is valuable because it deals with a condition with which we are all brought into contact, though it is a type of trouble that the large majority of us are apt to overlook.

DR. JOHN LOVETT MORSE, Boston: I merely wish to emphasize the importance of regulation of the diet in the treatment of these cases. The only way in which the diet can be accurately regulated is by having the mother keep an exact account of what the child eats, both as to quantity and quality, and by repeated examination of the stools. In this way only can we determine exactly what the cause of the condition is. The only feasible way of disinfecting the intestine is by changing the bacterial flora, and this can be done only by changing the food. I want especially to emphasize the value of the carbohydrates in changing the flora in these conditions. Changing the intestinal contents by the carbohydrates changes the flora, inhibits the growth of the organisms, which thrive on proteids, and hence prevents the formation and absorption of the products of the decomposition of proteids. When Dr. Coit spoke of protecting the bichlorid by hydrochloric acid, I wondered how many inches down the intestinal tract it would go before it was neutralized.

DR. FRITZ B. TALBOT, Boston: There is a general impression that it is a very difficult procedure to make an examination of the stools. From three to five minutes are required to make the examination, and it gives important information concerning the digestion of fat, starches and meat. I have been impressed by the fact that an excess of meat and starches is relatively uncommon and that an excess of fat is common in these cases of intestinal indigestion. The reason for this is that fat is the component of the food, which the parents are more likely to give in excess to a child who is run down.

DR. SAMUEL M. HAMILL, Philadelphia: Dr. Kerley is probably right in believing that I did not sufficiently emphasize the importance of rest in the treatment of chronic intestinal indigestion. He believes in prolonging the night's rest by giving these children their breakfast in bed. I am inclined to believe that in these cases many hours of consecutive rest result in the accumulation of toxic products which are very depressing in their effect. It is my custom, therefore, to have these children get up at a comparatively early hour, and, in order to secure a satisfactory total rest for the twenty-four hours, to have them rest at later periods of the day. I think that rest is so important that I sometimes have these children separated from other children by sending them to the country in charge of a nurse, where they can be under better control and where a quiet restful life is possible. I have not studied the temperature curve in the cases having convulsions, but I do not believe it would prove of value in the differential diagnosis from epilepsy.

As to Dr. Graham's remarks, I am perfectly willing to admit that children are more susceptible to reflex influences than are adults, but I do not believe the convulsive seizures in these cases are of a purely reflex nature. They are of toxic origin, as are the other symptoms.

I do not want Dr. McClanahan to believe that I am a therapeutic nihilist. I give drugs to these patients, but it is exceedingly important to emphasize the fact that drugs are overemployed and that they are frequently given without the slightest indication. I realize that it is desirable to console the mother by giving some medicine to the child, and I think we can do this honestly by prescribing some valuable drug, but we must make her realize the limitations of drugs, for unless we emphasize the necessity for general hygienic treatment the mother will neglect this and pin her faith to the drugs.

Dr. Morse spoke of the value of getting a record from the mother of the exact dietary of the child. I never treat a child without doing this, and I think it is exceedingly important. I secure not only a list of the various foods administered, but also a statement of the amounts of each food.

The examination of the stools, as has been suggested by Dr. Talbot, is not a difficult procedure, and one can gather much valuable information from the macroscopic study alone. The microscopic examination is important, but not so much so as the macroscopic. The sooner we realize that the examination of the stools is an easy procedure, the sooner we shall employ it as a routine measure.

NITROUS OXID AND OXYGEN ANESTHESIA*

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NASHVILLE, TENN.

The advances in the use and perfection of nitrous oxid anesthesia since the report of the Anesthesia Commission on this subject, at the meeting of 1908, seem to consist of the following:

1. The employment of this agent, with modifications, as the routine anesthetic in several of the large clinics of this country.

2. The demonstration clinically and experimentally of the advantages of nitrogen oxid and oxygen over ether, in the prevention of shock, the conservation of immunity and its value in the case of the handicapped patient (Crile).

3. The establishment of rebreathing of nitrous oxid and oxygen for two or three minute periods, as harmless and beneficial, with the great reduction in cost of this anesthetic (Gatch).

It has already been shown that nitrous oxid is the safest of all anesthetics and the most pleasant to take; that it requires the shortest time for induction; that there is almost immediate recovery after its discontinuance, and that it has no bad after-effects. There is no stage of excitement, and excitement is absent when the patient returns to consciousness. Dentists, who have used it in short administrations for many years, state that literally millions of administrations have yielded an infinitesimal number of deaths.

It is not absolutely free from danger, however. Death can occur from its continuous administration, without admission of air or oxygen in from two to four minutes. In overdosage, death is caused by asphyxiation and cardiac inhibition. In the fatal animal experiments, sudden arrest of the heart in overdistention was observed. The danger-signals with this anesthetic are:

1. Deep and persistent cyanosis.
2. Depression and slowing of the pulse.
3. Vomiting.

Cyanosis is the first indication of trouble, and gives startling warning of impending danger. Discontinuance of gas and giving of oxygen, which should be always at hand, uniformly and promptly dissipate all danger.

Crile has shown in the physiologic laboratory that animals under nitrous oxid withstand shock-producing trauma much better than under ether. The resistance of animals rendered pathologic from infections, hemorrhage, and hyperthyroidism, likewise, was strikingly better under nitrous oxid than under ether. These laboratory observations were corroborated by the histologic examination of the primitive ganglion cells of the central nervous system.

Crile's recent investigations in cytolysis show that there is decidedly more destruction of chromatin after ether than after nitrous oxid. Again, there is no lowering of the phagocytic power after nitrous oxid, as after ether. Nitrous oxid does not reduce hemoglobin or cause any permanent blood change. There is no acetone or indicanuria as a result. Postanesthetic complications are absent.

Although oxygen was used by Andrews with nitrous oxid as early as 1868, some of the later apparatus provided for the admixture of air. Bevan employs this gas and air mixture with success, and I have used it in a series of over 100 cases. This mixture, however, does not provide such smooth anesthesia as does the mixture with oxygen. On account of the large atmospheric content of nitrogen, if enough air is used to do away with cyanosis entirely, it so dilutes the mixture that complete anesthesia is interfered with. While cyanosis is not desirable and can be prevented by the addition of oxygen, yet it should be understood that the cyanosis is not nearly so dangerous as that cyanosis produced by ether or chloroform—a cyanosis due to cardiac and respiratory depression.

It seems to have been established by Gatch that rebreathing nitrous oxid and oxygen in periods of two minutes is not only perfectly safe, but helpful to respiration, circulation and blood-pressure. Moreover, rebreathing reduces the expense greatly, which was partly responsible for the somewhat restricted use of this agent. Rebreathing seems to be more satisfactory than the continuous administration of the gas. The respirations are deeper and fuller, and the pulse is slowed by the therapeutic excess of carbon dioxid stimulating the center of cardio-inhibition. The temperature is slightly raised. The argument for rebreathing is that carbon dioxid under 4 per cent. concentration is non-toxic; that in normal and somewhat increased amounts in the blood it is the normal stimulus to the venous wall; that the abolition of venous tonus and not arterial is the primary cause of failure of circulation in shock. Carbon dioxid stimulates the cardio-inhibitory, vasomotor and respiratory centers, and an increase such as is afforded by rebreathing during gas and oxygen raises the blood-pressure and is thus an easily available preventive of shock. The loss of body heat by expired air is conserved by rebreathing and artificial warming of the gases is rendered unnecesary.

The apparatus of Gatch providing for rebreathing is extremely simple, portable and inexpensive. It has a rubber sleeve that fits snugly and conveniently over the face-piece, preventing leakage of gases and the ingress of air which checks the anesthesia. The patient can be given air or gas, with or without oxygen, and made to breathe the mixed gases to and from the bag. Even a little air allowed to mix the gases spoils the anesthesia. The apparatus has an attachment permitting ether to be added when needed for short periods, all without removal of the mask, until the anesthesia is to be permanently withdrawn. It is a very powerful etherizing device when needed.

It is not necessary to attempt to give any arbitrary percentage of oxygen. Just enough to dispel the cyanosis is the aim and, roughly speaking, a puff of oxygen in each bag of nitrous oxid that is to be rebreathed is sufficient. Keep the patient pink, is the rule. If the color cannot be kept good, it is better to give ether by the open method.

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*Approved by the Committee on Anesthesia of the American Medical Association.

Not all patients, notably not the very robust and alcoholics, can be sufficiently relaxed without disagreeable cyanosis. In these, ether given for three or four minutes in the mask or by the open method, will usually accomplish relaxation and oblivion. The quantity of ether is negligible. When rigidity is overcome the gas may be resumed. A little ether, so small in quantity that the patient is never aware of it, is given in about three-fourths of the abdominal cases at Johns Hopkins Hospital (Gatch). The post-operative discomfort is less with a little ether and no cyanosis than with no ether and prolonged cyanosis. Pronounced cyanosis is apt to be followed by headache.

Teter estimates that a small quantity of ether given in this way will be necessary in about 10 per cent. of the cases. In laparotomies three, five or seven minutes of ether will be required in about 40 per cent. of cases.

Gas and oxygen can be used with impunity where ether is contraindicated, i. e., in kidney disease. Nitrous oxid has also been employed in advanced pulmonary lesions and seems to have caused no mortality. It is particularly helpful in those desperate cases from any cause that urgently demand operation and yet are so risky that the surgeon realizes that ether or chloroform is the added weight which depresses the beam.

The borderline cases in which the operator seriously questions the wisdom of trying to do anything, may have surgical aid extended safely, so far as the anesthetic is concerned, by nitrous oxid and oxygen, but only at the greatest hazard with ether or chloroform. Moreover, the inevitable, though small, anesthetic mortality from pneumonia, anuria, fatty degeneration of the liver, etc., can be be prevented.

The chief class of cases rendering nitrous oxid unsafe is that of heart lesions, whether myocardial or valvular.

Anesthetization with nitrous oxid is incontestably more difficult than ether. It requires special training and expertness to acquire the technic. Crile has had it administered practically as his routine anesthetic in over 1,000 cases. There has been one death six hours afterward which he charges to the anesthetic. With the increased experience acquired by his special anesthetist he feels that this fatality could now be averted.

The danger, therefore, is not so much in the agent as in the administrator, but this is equally true of the other anesthetics. The simple cases should be chosen first.

It is therefore not adaptable for the all-round use of the general practitioner, but will grow greatly in popularity in the highly perfected clinics, in hospitals with expert permanent anesthetists, and with those who specialize in anesthetics. Fortunately most of the major surgery and graver traumas are cared for under these conditions, and thus the desperate-chance patient may have this added safeguard and adjuvant to life-saving.

Gas and oxygen are not only indicated where the risk is great, but routinely they are a special boon to patients who have been operated on before and who have a more or less justifiable and vigorously expressed dread of the primary "smothering" effects of ether, and the secondary feeling of *mal de mer*.

Nitrous oxid can be safely administered for two or three hours, and at Johns Hopkins Hospital where it has been used routinely on the surgical side in over 1,000 cases, Gatch kept one patient under its influence for five hours without ill effects. It can be given longer with safety than any other anesthetic.

A preliminary dose of morphin gr. ¼ and atropin gr. 1/150 or half that amount is useful in the majority of cases to assuage the fear of the anesthetic and of the operative ordeal. Anesthesia is induced more easily and proceeds more tranquilly; a smaller quantity is required and the after pain is annulled. No food or drink should be given for at least four hours prior to operation. Do not begin the operation too soon.

Crile gives 1/150 gr. scopolamin or less two hours before operation. It induces the "twilight slumber" and obliterates any fright or even anxiety about the operation. The effect, and with the preliminary dose of morphin followed by the anesthetic lulls the patient into a drowsy somnolence which deprives the entire day of painful recollection.

Nitrous oxid and oxygen anesthesia with the apparatus not permitting rebreathing, costs about $5.00 an hour. With the apparatus of Gatch, obtaining the other benefits of rebreathing, the cost is reduced to $1.00 or $1.50 an hour. This cost may be further greatly reduced by installing, for a few hundred dollars, a permanent plant in the basement of the hospital, for the manufacture of nitrous oxid. It can be piped to the operating-room, thus doing away with the noise made by the escape of the gas under pressure in the cylinders.

Continuous auscultation of the heart by a phonendoscope, as practiced by Cushing and advised by Teter, gives accurate information, and allows both hands of the anesthetist to be employed with the patient and the apparatus.

ANESTHESIA IN TRAUMATIC SURGERY*

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BIRMINGHAM, ALA.

On being asked by the committee to report on anesthesia in traumatic surgery from the Birmingham district, I sent a circular letter to a number of surgeons in this country and abroad, asking them to give their experience and observations in regard to this subject; and below will be found a condensed form of the reports submitted by them.

Professor Eiselsberg writes that in the Vienna clinic they have a special station devoted to traumatic surgical cases. He advises that as small an amount of the anesthetic be used as possible. No morphin or scopolamin should be used in fractures of the skull as there is danger of sudden collapse. Morphin should precede the anesthetic in fractured ribs, thereby avoiding dyspnea. He prefers using Billroth's mixture (chloroform, ether and alcohol) followed by ether where a general anesthetic is to be used. Spinal anesthesia is to be used only where others are contra-indicated. He has never observed a death from the anesthetic. The greatest precautions are to be taken where a general anesthetic is used as traumatized patients are much more sensitive to the effects of anesthetics than other. Where possible the operation should be postponed until the first period of shock has been passed.

Dr. Charles H. Mayo says that he and his colleagues have practically no traumatic cases in their surgery and that they have had very little opportunity to observe the effects of anesthesia in this class of work.

Dr. George W. Crile writes as follows:

Wherever possible, nitrous oxid oxygen anesthesia is used. I base my preference on the observation that under nitrous oxid anesthesia there is less shock than under ether. That is,

* Approved by the Committee on Anesthesia of the American Medical Association.

either nitrous oxid offers a certain protection or ether does a certain amount of harm, I am not prepared to say which it is. In cases of intracranial pressure I should use only local anesthesia. In these cases, when anemia of the brain is threatened, a little pressure is often sufficient to cause a fatal degree of anemia. Likewise, if in fractures the shock is not deep, I should prefer ether, because there is better muscular relaxation and better adjustment could be made. Whenever practical during operations, I cocainize the large nerve trunks. There is no doubt that spinal anesthesia is accompanied by less shock, but I have not as yet adopted it as a general operative anesthesia.

Dr. John C. Munro, since resigning from the Boston City Hospital six years ago, has seen very little traumatic surgery; prior to that time his experience was very large. His observations have been that any general anesthetic, except in short operations, increased the shock of the trauma. Ether acts as a temporary stimulant but, beyond ten or fifteen minutes, is a cause of increased shock. He does not like cocain locally on account of the increase of time required for operation and the increase in psychic depression. Ether is superior to chloroform in chest injuries. A general anesthetic should be used to prevent shock from pain that comes with handling fractures, etc., and it should be used if it will shorten the operative procedures and prevent prolonged exposure of the patient.

Mr. Rutherford Morrison, Newcastle-on-Tyne, holds that the danger of the anesthetic depends more on the skill and care of the anesthetist than any other factor and that other considerations are insignificant. He asserts that shock is combated by the anesthetic and especially the open ether method plus oxygen. In any and every case the anesthetic should be preceded by morphin and atropin. With a skilled anesthetist his preference is for chloroform by Vann Harcourt's inhaler for everything; with an unskilled anesthetist ether offers a larger safety margin.

Dr. T. C. Witherspoon, of Butte, Mont., treats a large number of traumatic cases from the mines and railroads; he relies entirely on ether as a general anesthetic and eucain and cocain for local use. A local anesthetic is always used where it will suffice. He has not used spinal anesthesia in this class of cases but thinks it would be more useful and safer than ether. He has never seen a death attributable to the anesthetic either in traumatic or non-traumatic cases.

Mr. Robert Jones, of Liverpool, says that he has been much interested in this subject. He writes:

> About fourteen or fifteen years ago, when I was appointed operating surgeon to the Manchester Ship Canal Works, where we had three hospitals and 20,000 people working, I had a great deal to do with the administration of anesthetics during the condition of grave trauma; and in such cases as double amputation of the leg, or amputation of thigh and arm, where disinfection and operation had to be rapidly done, I found the results very unfortunate, so many apparently never recovering from the anesthesia combined with the shock.
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> I made a good many experiments as to anesthesia administration, and found shock (as evidenced by pulse and temperature) more pronounced after chloroform than after ether, but that the administration of either resulted in a certain degree of shock. I also noted that the navvy, who is a very obstinate man in this country, would come in, perhaps, with badly crushed legs which required amputation, but which he refused to have amputated. To my astonishment, these patients often lived on until sepsis or some other trouble supervened; and some lived on until, weeks or months afterward, operations were allowed. One also noticed that, even after very trivial operations, patients were sick and generally upset, and I became convinced that, in conditions of grave shock, if one could operate without an anesthetic, the greatest possible advantage would accrue. I therefore determined that, in all my big smashes, I would behave as the surgeons used to behave in the days of old and amputate without any anesthetic at all. I used to give them plenty of hot water to drink, and, after preliminaries, I amputated as rapidly as I could. The patient hardly ever complained of pain except when the knife went through the skin, and nearly always when the bone was sawn there was a fall in the pulse and a sigh or groan. From the time I adopted this line of treatment, my results show astonishing improvement: the mortality became markedly lessened, the patient (instead of sleeping on to eternity) conversed with one immediately the operation was over, and in some instances the pulse gave the impression of having improved. By this method I have amputated both legs and an arm in the same patient, and altogether operated in twenty-seven cases of grave lesions. Unfortunately, the hospital was burned down and my precise records were destroyed, so that I have never been able to publish the results in detail, but have depended on impressions. Although I had almost a rebellion on the part of the staff when I started this method of treatment, they all became enthusiastic when the results were appreciated.
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> I will give another case in point bearing on the same question. My house surgeon from the Southern Hospital telephoned to me one evening, about fifteen years ago, that a man had been badly smashed by being taken round a wheel in a forge. The shoulder was evulsed, the pectoral muscle lay outside his chest, the patient was pulseless and the house surgeon said that it was no good coming to see him. I went up, however, and found the man pallid, with ribs broken and the pulse barely appreciable in the other arm. With a pair of scissors I clipped the muscle slowly through, tying every little vessel and taking half an hour or more in trimming up and removing the whole of the upper arm, and the house surgeon at the end told me that his pulse was now quite clearly to be felt.

Dr. John A. Wyeth of New York, considers chloroform more dangerous in any and all forms of surgery than ether; ether more dangerous than nitrous oxid, and nitrous oxid combined with oxygen the least dangerous of all general anesthetics. He advises a close study of each case before deciding on an anesthetic, and thinks that a local anesthetic can often be used instead of a general anesthetic.

Dr. J. J. Buchanan of Pittsburg finds that in cases of pronounced shock, in which a general anesthetic is contra-indicated, operations of necessity, such as amputations, can be done without anesthesia of any kind, without materially adding to shock, if performed with celerity. He finds, also that, under similar conditions, abdominal section and internal manipulations are well endured without anesthesia, if manipulation is not too complicated or prolonged. A general anesthetic is contra-indicated in head injuries with pronounced cerebral symptoms, also in collapse of the lung from external open injury.

Dr. John B. Roberts of Philadelphia thinks that ether acts as a heart stimulant and lessens shock, but that it may be only temporary. He thinks death is usually due to a "bad etherizer." He has had little experience with other anesthetics.

Dr. Joseph C. Bloodgood of Baltimore, says:

> In my experience all anesthetics, except perhaps nitrous oxid, as they are toxic substances, would rather increase the effects of trauma. It is quite true that indirectly they may do good when they allow us to remove all cause of the shock greater than the anesthetic itself; for example, hemorrhage, infection, perforation in peritonitis, pancreatitis, lacerated and crushed limbs. Here we must risk the danger of the anesthetic in order to remove a condition which is keeping up the shock. I am also of the opinion that there is a definite relation between the degree of seriousness of the

condition and the shock and the part of the body subjected to operation or injury. It is my opinion that the anesthetic acts about the same except in surgery of the chest. The anesthetic of choice to-day with me is nitrous oxid gas and oxygen; next, nitrous oxid combined with ether; next, ether alone by the drop method; chloroform I rarely employ; spinal anesthesia never.

Dr. A. J. Ochsner of Chicago says that he simply uses ether in all cases whether traumatic or non-traumatic. He has kept records in a large number of cases in which chloroform was given until anesthesia was accomplished, then ether, except where contra-indicated. Then for a time he used nitrous oxid gas but has gone back to the use of ether by the open drop method.

Professor Rovsing of Copenhagen, says:

I use always, in traumatic as in ether cases, only the morphin-ether narcosis with the Wanssleer apparatus. I have never seen an accident, never had but one disagreeable moment in using this method.

Dr. Walter Lathrop of the state hospital for the middle coal-field of Pennsylvania at Hazleton, writes:

Our traumatic surgery consists almost entirely in the treatment of accidents sustained in and about the mines, and the question as to whether an anesthetic should be employed is answered in the injury itself, in most instances, and not entirely dependent on the judgment of the surgeon, for the majority of the cases are of such a nature as to demand immediate operation on admission.

From the time the accident occurs until the patient is received in the hospital considerable valuable time elapses, the distance they are transported varying from one to ten miles, and it is only natural to suppose that many suffer excruciating pain and gladly submit to any course of treatment by which their suffering can be alleviated. It invariably happens that those severely injured beg to be "put to sleep," as they express it. With the fear of taking an anesthetic, so commonly encountered in non-traumatic surgery, eliminated, the depressant action of the anesthetic does not manifest itself so markedly, while the pain endured undoubtedly acts as a stimulus to the various nerve centers. These factors, acting as a unit, preclude to a great extent any danger in administering anesthesia, except in those cases in which exhausting hemorrhage has occurred or in profound nervous depression, for in this type it would be almost malpractice to attempt any local treatment without first endeavoring to combat the constitutional deficiency. An anesthetic is administered fearlessly in injuries of various parts. No discrimination is made as to the injured parts, following of course the rules mentioned above. For general anesthesia, our anesthetic of course is chloroform, preceded in all cases by a hypodermic injection of morphin, gr. ¼, and atropin, gr. 1/150, based entirely on its successful use covering a period of eight years. In extreme cardiac weakness ether is sometimes substituted. Ethyl chlorid is used largely in superficial work. Traumatic shock, unless it be of a very severe type, does not contra-indicate the employment of anesthesia, for it has been found that in many cases the circulatory and respiratory systems often return to a condition nearer normal while under the anesthetic; especially is this true if the function of either has been embarassed directly by the injury. Death from anesthesia, either sudden or a reasonable length of time after its use in traumatic surgery, we have not yet experienced.

Professor Tuffier of Paris says that ether is the anesthetic of choice, but that he uses chloroform in chest conditions and uses a local anesthetic only on the extremities, as fingers and toes. He advises waiting until the shock has disappeared before operation and thinks the mortality depends on the severity of the shock. He uses spinal anesthesia in treating fractures of the extremities.

Dr. John H. Gibbon of Philadelphia says:

In the absence of shock, I do not see that trauma in any way affects the anesthesia, except in extensive injuries of bones or extensive injuries of fatty structures when I think that fat embolism of the lung may be aggravated by ether. Serious injury of the thorax, I think, renders the administration of an anesthetic more dangerous. As a rule, I employ the following sequence in producing anesthesia, morphin gr. ¼, atropin gr. 1/150, by hypodermic twenty minutes before the anesthesia is started, then ethyl chlorid followed by ether. Spinal and infiltration anesthesias are used where possible, if the general anesthetic is contra-indicated. Where I am obliged to operate in shock, as for instance in hemorrhage, I employ the same sequence as in other cases. Except for shock, I do not see that the anesthetic acts any differently in traumatic and non-traumatic cases.

Dr. George Tully Vaughan of Washington does not find that there is any marked difference in anesthesia in disease and in trauma. He prefers ether to any other anesthetic and thinks that even in minor cases a general anesthetic is preferable to local anesthesia and is not any more dangerous than as correspondingly large dose of a local anesthetic.

Dr. John Rogers of New York says that ether is the anesthetic in general use at Bellevue Hospital. He prefers nitrous oxid and oxygen for injuries of the extremities but thinks ether or chloroform is to be preferred to nitrous oxid in injuries of the head.

Dr. Charles K. Teter of Cleveland has made some experiments comparing nitrous oxid with ether and finds that shock-producing trauma is better borne under nitrous oxid. He finds that the blood-pressure remains higher under nitrous oxid, and in shock it rises, whereas under ether it usually falls. He has used nitrous oxid in something over 15,000 cases with only one death; and this was not due to the anesthetic.

Dr. Edward H. Ochsner of Chicago does not think that traumatism *per se* is an indication against the use of an anesthetic if properly given. He thinks that ether if properly given is almost devoid of danger; he prefers training a lay woman to give anesthetics. He thinks that the subject of anesthesia is really settled and that any further investigation can not add materially to our knowledge of the subject.

Dr. W. W. Grant of Denver prefers ether with oxygen. He advises against the administration of any anesthetic until the patient has reacted. He thinks there is "less shock and greater immunity from anesthetic" in head injuries than in other parts of the body.

Dr. J. D. S. Davis of Birmingham, says:

Ether, I think, is the best anesthetic in shock in traumatic surgery. I have had no deaths from anesthetics in traumatic surgery. Ether is the safest anesthetic in fracture cases, internal injuries and rupture cases, especially where shock is present. In traumatic cases with shock, ether is not only more satisfactory and safer than chloroform, but as a rule, relieves the shock. In traumatic surgery, I believe that primary operation under ether is safer than waiting for shock to subside before administering the anesthetic. I have had very little experience with nitrous oxid gas and oxygen, but I believe it is the coming anesthetic in traumatic surgery, because it has marked advantage over ether in the relief of shock.

My personal experience has been confined principally to mine injuries, including injuries of the head, spine, extremities and trunk. It has been my good or ill fortune to operate on eighteen or twenty spinal injuries with very little benefit to the patients, as in most instances the cord has been torn in two; in one case I

sutured the cord and my patient did well for about two weeks when he died from an ascending infection from the bladder; I have invariably used ether in these cases, after the patient had reacted. A few years ago I became interested in the use of stovain as a spinal anesthetic and found that it reduced the shock where the extremities were badly mangled and enabled us to operate earlier than where a general anesthetic was used.

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THE COMPARATIVE DANGER OF ETHYL CHLORID AS AN ANESTHETIC *

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Statistics are notoriously unreliable, and yet there are certain problems which can hardly be studied by any other method. A striking illustration of one of the causes which leads to the untrustworthiness of vital statistics is found in the recent paper by Miller[1] on ethyl chlorid anesthesia. In this paper Miller presents the statistics on 43,796 anesthesias with ethyl chlorid, in which there were 5 deaths. In the same paper, however, there are references to some 30 fatalities occurring during ethyl chlorid anesthesia, of which at least 20 are directly attributable to the anesthetic. These cases, however, could not be included in his table, because they were reported as isolated cases without any means of determining the corresponding number of anesthesias which had been produced with safety. Miller from his statistics places the mortality from ethyl chlorid anesthesia at 1 in 8,800 cases. McCardie[2] presents statistics of 9,711 cases with four deaths of which he was cognizant. Of these cases 2,000 (with no deaths) the personal experience of McCardie are included in Miller's table. It would seem, however, that it is only fair in attempting to reach conclusions as to the danger of these anesthesias, that McCardie's statistics, although they cover a comparatively small number of cases, should be added to those of Miller. If we do this we have statistics of 51,507 cases with 9 deaths, a mortality of 1 in 5,710. The statistics on ether and chloroform of Coates, Gould, Garree, Gurlt and others,[3] covering several million cases, give a mortality from chloroform of about 1 in 3,500, and from ether, 1 in 15,000. From the statistical standpoint, therefore, ethyl chlorid would seem to stand between ether and chloroform, but closer to the latter.

This conclusion, however, is unfair because the anesthesias by ethyl chlorid have practically all been of but a few minutes' duration, and the secondary dangers which occur as a result of prolonged anesthesia and which have caused a considerable bulk of the fatalities of ether and of chloroform do not come into consideration in the case of ethyl chlorid. Ethyl chlorid, on account of the quickness and fugaciousness of its action, enters into competition with nitrous oxid gas rather than with ether. Lee,[4] in reviewing the use of ethyl chlorid at the Pennsylvania Hospital, says that, in spite of the comparatively high mortality which has followed its use at that institution, it is "still being used for minor surgical procedures and dressing more painful wounds," and also as a preliminary to ether. Of twenty-two deaths reported by Luke,[5] 8 were in dental cases. It is evident, therefore, that the fair comparison for ethyl chlorid is with nitrous oxid when used for a few minutes only. If we set alongside of the commonly accepted mortality for the latter gas so used, 1 death in 1,000,000 anesthesias, and the figures for ethyl chlorid, 1 in 6,000, the danger of this agent is evident.

As remarked by Miller, the safety of an anesthetic is to be judged by two factors: first, the range between the amount required to produce unconsciousness and that required to kill; and second, the character of the signs which indicate approaching danger. As this author points out, the danger signals in ethyl chlorid anesthesia are such as may be easily overlooked by any except the most experienced anesthetizer. There is another element of danger which comes to light in studying the reports of the individual fatalities from ethyl chlorid, and that is the extraordinary suddenness of the end. In the great majority of these cases death has occurred from an anesthesia of less than five minutes; in one instance the patient was dead within half a minute from the beginning of the inhalation.

McCardie calls attention to the high mortality from this anesthetic in England as compared to the European continent, which he believes is due to the fact that it is habitually administered in that country by the "closed" method; a number of experienced anesthetizers are in accord with this view.

While I may perhaps seem unduly harsh in my condemnation of an anesthetic which has given good results in the hands of a number of anesthetizers of large experience, it is because of my profound conviction that the freedom with which this drug is being employed by inexperienced and untrained persons, with the idea that it is practically as safe as nitrous oxid, is little short of criminal. In this country, especially outside of large cities, it is being used habitually by dentists in connection with the extraction of teeth. This practice, I believe, is one which the medical profession should strongly condemn. The only possible advantage possessed by ethyl chlorid over gas, aside from the question of cost, is its portability. Such considerations, however, should not be allowed to stand for a moment as against the fact that ethyl chlorid is about 200 times as dangerous as nitrous oxid.

434 South Forty-Fourth Street.

* Approved by the Committee on Anesthesia of the American Medical Association.

1. Miller, A. H.: Value of Ethyl Chlorid as a General Anesthetic, Boston Med. and Surg. Jour., May 26, 1909, p. 643.
2. McCardie, W. J.: Ethyl Chlorid as a General Anesthetic, Brit. Med. Jour., March 17, 1906, p. 616.
3. See Wood's Therapeutics, p. 38, Edition 14.
4. Lee, W. E.: Use of Ethyl Chlorid as a General Anesthetic in the Pennsylvania Hospital, Ann. Surg., November, 1908, p. 461.
5. Luke, T. D.: Twenty-two Fatalities Which Have Occurred Under Ethyl Chlorid, Lancet, London, May 5, 1906, p. 1235

Simple Non-Operative Cure of Hemorrhoids.—J. Toth writes to the *Wiener medizinische Wochenschrift*, Nov. 19, 1910, to call attention to a simple means of keeping hemorrhoids under control, and finally curing them, by gentle, constant compression. This is accomplished, he says, by means of a rather loose pledget of absorbent cotton, not larger than a large pea, which is introduced into the anus between the internal and the external sphincters. Under the influence of the compression the varicose enlargement of the veins at this point retrogresses and the hemorrhoids become obliterated. The loose cotton pledget has several advantages over a solid device for the purpose: The anus does not behave toward the cotton as toward a foreign body, while the gentle compression day and night is scarcely perceived. The pledget does not have to be removed before defecation, as it is expelled with the stool. Systematic perseverance in its use is the main thing. Toth says that he has been successfully applying this simple measure for several years.

PREVENTION OF HEMORRHAGE IN PULMONARY TUBERCULOSIS BY THE ADMINISTRATION OF AUTOGENOUS VACCINES *

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Discharge of blood from the mouth may be caused by heart disease, carcinoma, hemophilia, arteriosclerosis, vicarious menstruation, hysteria, aneurysm, bleeding gums, or nasal, pharyngeal, or gastric lesion, but the great majority of hemorrhages are from tuberculosis of the lungs.

Stricker[1] found 221 of 480 hemorrhages due to tuberculosis, and in 196 more this was probably the cause. See[1] (1884) says, "Aside from infectious diseases, hemophilia, and acute infections of the lungs (pneumonia, abscess, gangrene) we only know of two real causes of hemoptysis—heart disease and pulmonary tuberculosis."

The pathologic conditions preceding hemorrhage vary with the stage of the disease. In early cases it may be due to localized hyperemia in the lung induced by violent or long-continued exercise; or, more likely, due to weakening and erosion of small blood-vessels by the growth of tubercles. Early hemorrhages are always venous; in later stages hemorrhages arise from both the arteries and veins (Minor[1]). The connective tissue of the adventitia is more resistant to dissolution than the surrounding pulmonary tissue, and vessels stand out in the walls of cavities unsupported; on these unsupported vessels aneurysms develop and hemorrhage results with a weakening of the wall of the aneurysm and any slight rise in blood-pressure. That hemorrhage is due, in many cases, to rise in blood-pressure is seen in its relation to overexertion. Hemorrhage may also result as an oozing of blood from granulations lining old cavity walls.

The frequency of hemorrhage has been reported as between 30 and 80 per cent. De Renzi[1] says that hemorrhage occurs in one-third to two-thirds of his cases (1894), Fox[1] (1891) in 54 per cent, Aufrecht[1] (1905) in 26.4 per cent, Williams[1] (1887) in 57 per cent, Walsh[1] (1871) in 81 per cent. (Minor). In the 181 cases which I have studied the percentage is much less, 15.46.

The immediate causes of hemorrhage given by various authors are overexertion, straining at stool, blows on the chest wall, and other things that would cause an undue rise in blood-pressure. Excitement, worry, temper, etc., would act in the same way. Hot, damp weather favors hemorrhage. The systemic plethora of the premenstrual period and vicarious menstruation may be rare causes. The overfeeding of tuberculous patients not infrequently predisposes to hemorrhage. The importance of sex is slight. The season of the year has a marked influence on hemorrhage; the worst period of the year, in the vicinity of Chicago, being the summer, and the hot spells are especially dreaded. Epidemics of hemorrhages have occurred, however, at other periods of the year, frequently during the winter and spring. These, I believe, are due to epidemics of "colds," influenza, etc.

Fox[1] (1891) says that heredity is important, patients with a marked family history of tuberculosis showing the greater tendency. Age is also an important factor; hemorrhage is very rare in childhood, more common between the ages of 20 and 30, less common after 45, and rare in old age.

The influence of mixed infection on hemorrhage is not given by any of the authors I have consulted, but Flick concludes from the bacteriologic studies made by Ravenel,[2] Irwin, and himself that the pneumococcus is an important agent in causing hemorrhage. The influence which mixed infection may exert on the pathologic changes occurring in pulmonary tuberculosis is by no means definitely known. The bacteriologic examination of the sputum reveals but little in the majority of cases because so many of these secondary organisms are found under normal conditions living saprophytically on the mucous membranes in various parts of the respiratory tract. Some authors state that the bronchi in health are free from bacteria (Cornet[3]). Others assert that a great variety may be present even in health. Post-mortem bacteriologic studies of the lung have revealed but little. Streptococci, notorious as causing terminal septicemia, have been found in a majority of the cases examined. How are we to know whether they were present in the lung early in the disease or invaded as a terminal septicemia? The findings of most investigators in this field show the presence of the *Bacillus coli*, *Proteus vulgaris* and other post-mortem invaders, in addition to the pyogenic cocci and the diphtheria bacillus in the lungs examined. Organisms of secondary infection have been found in the blood-stream in a small number of cases, usually far advanced, and but a short time before death. Panichi,[4] however, reports that in three of four cases he recovered organisms of mixed infection from the blood-stream at least two months before death.

Prudden[5] (1894) was unable to produce cavities in guinea-pigs by the inoculation of tubercle bacilli alone. He was able to produce them, however, in tuberculous guinea-pigs by intratracheal injections of streptococci. Marmorek,[6] on the contrary, was able to produce cavities by injecting tubercle bacilli in conjunction with large quantites of strong tubercle toxins.

Webb[1] says that an irregular opsonic index to any of the secondary organisms is diagnostic of mixed infection. Wirth[7] examining twenty-five cases, found abnormal indices in cases showing no temperature and did not find irregular indices in cases showing high and irregular temperatures. He found serums giving a normal result at the time of drawing to show abnormal indices the following day. The normal index he considered as between 0.8 and 1.2. He found no change in the index to *Bacillus capsulatus, tetragenus, catarrhalis, Bacillus pneumoniæ, Bacillus coli,* or *subtilis,* but he found a variation to staphylococcus, streptococcus, pneumococcus, and influenza bacillus. The following were his results: influenza, 2 out of 17 examined; staphylococcus, 2 out of 17 examined; pneumococcus, 18 out of 24 examined; streptococcus, 6 out of 19 examined. I have taken the opsonic index to the pneumococcus, strepto-

* Work done under the Max Pam Research Fund. The article was awarded the Freer medal by the prize essay committee of the Alumni Association of Rush Medical College.

1. Klebs: Tuberculosis, ed. 1, New York, 1909, Appleton & Co., p. 212

2. Ravenel and Irwin: Phipps Inst., Rep., 1906 iii, 229; iv, 392.

3. Cornet: Nothnagel, Encyclopedia of Practical Medicine, Am. ed., Philadelphia, 1904, Saunders & Co., p. 488.

4. Panichi: Der Pneumococcus im Blut bei Lungentuberculose, Berl. klin. Wchnschr., 1908, No. 41, p. 1840.

5. Prudden: Concurrent Infection and Formation of Cavities in Acute Pulmonary Tuberculosis, New York Med. Jour., July 7, 1894.

6. Marmorek: Production expérimentale de cavernes pulmonaires chéz le cobaye et le lapin, Soc. de biol. Séance du 26 Janvier, 1904.

7. Wirth: Beitr. z. Klin. d. Tuberk. (Brauer's), xii, 159.

coccus and staphylococcus in 40 cases representing all stages of the disease, both active and inactive, and found an abnormal index in only one case. The index in this case was 0.75 and this was to the staphylococcus. This patient had an anal fistula in which the staphylococcus was present in large numbers. The normal index in both Wirth's report and my own was considered as between 0.8 and 1.2. Therefore I do not consider the opsonic index of value in the diagnosis of mixed infection in tuberculosis.

It is difficult to estimate the importance of mixed infection in tuberculosis at the present time. The experimental results are contradictory and the conclusions of investigators are at variance. Because of the atypical course of the disease, the rapid variations in temperature at irregular intervals, the fact that extensive infiltration may occur in a few days and disappear leaving areas of caseation or softening, I am convinced that organisms other than the slow-growing, persistent, slightly toxic, tubercle bacillus are concerned. Some authors have contended that practically all the damage to lung tissue is done by organisms other than the tubercle bacillus.

Weaver[8] has shown that injections of killed streptococci protects rabbits against subsequent injections of large numbers of living virulent streptococci. The work of Wright[9] and others has shown that injections of killed and attenuated bacteria have a protective effect against subsequent infection. This production of active immunity has been known for a long time and its importance in preventive medicine has been proved conclusively by Jennerian vaccination against small-pox, and Pasteur's vaccination against chicken cholera, anthrax and hydrophobia. It has been successfully employed against typhoid. Wright has collected statistics dealing in all with 49,600 individuals, of whom 8,600 were inoculated and showed a case incidence of 2.25 per cent. with a mortality of 12 per cent. In the remaining 41,000 uninoculated the case incidence was 5.75 per cent. with a case mortality of 21 per cent.

The data on protective inoculations against pyogenic infections are very meager, but the results that have been obtained in therapeutic inoculations against the gonococcus, streptococcus, staphylococcus, pneumococcus, etc., especially in chronic, subacute and localized infections, seem to show that injections of killed organisms hasten recovery and protect against relapse.

Webb[1] has used killed organisms against mixed infection in tuberculosis and has observed a protection in inoculated cases against influenza. Five patients inoculated against influenza with their own organisms, and eight inoculated against influenza with stock vaccines, all giving histories of repeated former attacks, escaped the epidemic. Preventive inoculations were not given in thirty-two cases, the patients denying that they ever had influenza, and fifteen succumbed to an influenza epidemic.

Since June 15, 1909, I have administered autogenous vaccine in thirty-one cases of pulmonary tuberculosis at the Ottawa Tent Colony. Of these thirty-one cases twenty-one were under observation two months or longer. Patients not under observation at least two months are not included in this report.

Vaccines were not administered as a protective measure, but therapeutically. It has been observed that during the fall and winter of 1909-10 hemorrhages have been less frequent than before. The class of patients, diet, exercise, sleeping conditions, and supervision were practically the same as in preceding years; the only new factor introduced into the treatment was the autogenous vaccines. It occurred to me that possibly the injection of vaccines against the organisms of secondary infection had a protective action against tissue dissolution and hence against hemorrhage.

The vaccines administered in all cases were autogenous. They were prepared by taking carefully selected particles of sputum and washing by whipping vigorously in several changes of sterile water with sterile forceps. The washed sputum was then introduced into about 10 to 15 c.c. of either plain bouillon or a medium made up of 1 part of sterile beef serum and 3 parts of bouillon. This was incubated at 37 C. for twenty-four or forty-eight hours, at which time a moderately thick growth had developed. The beef serum mixture appeared to have no advantage over the plain bouillon. The growth was then examined for bacteria, and the relative number of cocci, in pairs, tetrads, clumps and chains were noted. Allen[10] says the proportion of the various organisms thus grown is approximately the same as when introduced. More recently I have been using large blood-agar slants for the cultivation of bacteria from the sputum. The emulsion of bacteria was shaken vigorously for ten or fifteen minutes, centrifuged at high speed for from forty-five seconds to one and one-half minutes, depending on the density, and the supernatant homogeneous emulsion decanted into another tube.

The number of organisms was then estimated by Wright's method. This is done by taking up one volume of 1.5 per cent. solution of sodium citrate in a capillary pipette, then equal volumes of blood and bacterial suspension, mixing thoroughly on a slide, drawing up into the pipette and then making four slides by placing a small drop on each and drawing out in a thin smear by dragging the edge of another slide over it. These were stained with methylene blue and the erythrocytes and bacteria present in fifteen fields in each of the four slides were counted. An estimation of the number of organisms present in a cubic millimeter of the emulsion was then calculated. The number of erythrocytes in 1 cubic millimeter was considered as 5,000,000; the number of erythrocytes in the number of fields counted is to the number of bacteria as 5,000,000 is to x. By multiplying by 1,000 the approximate number of organisms in 1 c.c. was obtained. This is a long and laborious procedure, so I tried counting the bacteria in a blood-counting chamber in the same way the blood-count is made. To do this it was necessary that the organisms be stained. I used a fresh, carefully filtered solution of gentian violet or Unna's methylene blue. I drew some of this stain into the pipette, a volume of the bacterial suspension, to be estimated, then more stain, and finished my dilution with either distilled water or salt solution. The pipette was shaken vigorously, several drops blown out and a small drop placed in the Thoma or Turck counting-chamber and covered with an ordinary thin coverslip. The coverslip used in blood-counting is too thick to use with the oil immersion lens. The chamber was then set aside until the organisms had settled; it usually takes about one to six hours, depending on the diluent used and the size and number of the organisms present. Whether the organisms have all settled out or not is easily determined by focusing on the

8. Weaver: Jour. Infect. Dis., 1908, v, 589.
9. Wright: Studies on Immunization, Ed. 1, London, 1909, Constable & Co., Ltd.
10. Allen: Vaccine Therapy and Opsonic Treatment, Ed. 2, Philadelphia, 1908, Blakiston's Son & Co.

lines of the chamber and then raising the lens through several planes and looking for organisms in suspension. The bacteria are well stained and easily distinguished. If there are confusing particles of dirt present, a weak alcoholic solution can be used as a diluent; this gives a very clean slide and the bacteria are easily picked out. The method is very simple and rapid, and, I believe, more accurate than Wright's method. In the preparation of vaccines during the past four months, November, 1909, to March, 1910, I have used this method exclusively.

The organisms were killed by heating to 60 C. for forty-five minutes, either before or after counting, and sterility was insured by inoculating a tube of broth or blood-agar from the heated suspension. The suspension was then placed in a sterile bottle of brown glass and a drop of strong phenol or compound solution of cresol added.

The size and frequency of the dose administered depended on the condition of the patient. In afebrile patients in fairly good physical condition comparatively large doses, 200 to 500 million, were given, at intervals of seven to ten days. In febrile cases with the patients in poor physical condition, doses of 25 million were administered every second or third day for several doses and then increased to 50 and 100 million. When doses of 100 million or more were given the interval was lengthened to from five to ten days. In all cases considered in this report, at least three doses were administered. The number of hemorrhages occurring in all classes of patients under observation for at least two months, from June 15, 1908, to March 1, 1909, are compared with the number of hemorrhages occurring in all classes of patients under observation for at least two months, from June 15, 1909, to March 1, 1910. The number of hemorrhages occurring in all classes of patients receiving vaccines during the latter period is compared with the number of hemorrhages occurring in cases not receiving vaccines during the same period.

TABLE 1.—HEMORRHAGES BETWEEN JUNE 15, 1908, AND MARCH 1, 1909, NO PATIENTS RECEIVING VACCINES

Class.	Cases, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	42	6	14.28
Moderately advanced	44	11	25
Advanced	13	1	7.7
Far advanced	1	0	....
Total	100	18	18

TABLE 2.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND MARCH 4, 1910, ALL PATIENTS, THOSE RECEIVING VACCINES AND THOSE NOT RECEIVING VACCINES

Class.	Cases, No.	Vaccinated, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	16	3	0	0
Moderately advanced	30	4	5	16.6
Advanced	24	11	4	16.66
Far advanced	11	3	1	9.1
Total	81	21	10	12.34

TABLE 3.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND MARCH 1, 1910, PATIENTS RECEIVING VACCINES

Class.	Cases, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	3	..	....
Moderately advanced	4	..	....
Advanced	11	1	9
Far advanced	3	..	....
Total	21	1	4.7

TABLE 4.—HEMORRHAGES BETWEEN JUNE 15, 1909, AND MARCH 1, 1910, PATIENTS NOT RECEIVING VACCINES

Class.	Cases, No.	Hemorrhages, No.	Hemorrhage, Per Cent.
Incipient	13	..	....
Moderately advanced	26	5	19.2
Advanced	13	3	23.1
Far advanced	8	1	12.5
Total	60	9	15

It is seen from the tables that the total number of hemorrhages during the same period of time and during the same seasons of 1909-1910 is about 50 per cent. less than the total number of hemorrhages occurring during a corresponding period in 1908-1909.

From June 15, 1909, to March 1, 1910, in patients receiving vaccines the percentage of hemorrhage is only one-third of the percentage in patients not receiving vaccines. All patients were under exactly the same conditions of housing, feeding, and medical supervision. While it is not admissible to draw definite conclusions from such a small number of cases, the results seem to be indicative and will justify the administration of autogenous vaccines in a larger number of cases as a protective measure. A report will be made next year.

I wish to thank Miss Elizabeth Peck and Miss Elizabeth Byrne for assistance in the preparation of vaccines and the determination of opsonic indices.

In addition to the articles previously cited, the following references will be found of interest:

Ravenel and Klebs: Rep. Internat. Cong. on Tuberc., 1908.
Jöchman: Ueber die Bakterie bei Lungentuberkulose; Ein Beitrag zur Frage der Mischinfektion, Deutsch. Arch. f. klin. Med., 1905, lxxxiii, 558.
Tessier: Jour. de physiol. et path. gén., 1901, iii, 223.
Laird: New York State Jour. Med., 1908, viii, 516.
Foulerton: Lancet, London, 1901, ii, 311.
Huguenin: Ueber Sekundarinfektion bei Lungentuberkulose, Cor.-Bl. f. schweiz. Aerzte, 1894, No. 14, p. 14.
Kerchensteiner: Studien zur Bakterie der Lungen und bronchial Eiterungen, Deutsch. Arch. f. klin. Med., 1903, lxxv, 132-180.
Ortner: Die Lungen-Tuberkulose als Mischinfektion, Beitr. z. klin. Med. u. Chir., 1893.
Pasquale, A.: Die Streptokokken bei der tuberkulöse Infektion, Centralbl. f. Bakteriol., 1894, xvi, 114.

TINCTURE OF IODIN FOR THE UMBILICAL CORD

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The increasing use of iodin suggested to me its application to the freshly severed umbilical cord. The tincture, as is well known, tends to form a dry iodin-impregnated scale or scab over any moist surface not giving off a purulent discharge, such as a clean varicose ulcer or a freshly sutured wound. The treatment to be described was tried on several infants with satisfactory results. In one case the cord was found mummified and separated on the fourth day, the granulated surface healed to a small dry scab within the same week. Others averaged ten days to two weeks for the entire process. Iodism was not observed. The technic used is as follows:

As soon as the cord is cut and tied, blood and vernix caseosa are wiped off with a sterile pledget. The stump is then painted with the official tincture until deeply stained; especially the cut end, the ligature, and the line of attachment. Due care should be taken to avoid the epidermis beyond the line of union with the cord. After the bath, dry sterile gauze or cotton is packed about the stump and held with the usual binder. In case the dressing becomes soiled or moist it is changed at once. After the cord falls off the granulating or denuded surface remaining is painted as before, and the dressing is reapplied. The advantages of the method consist in simplicity, increased rapidity of drying, and the penetrating bactericidal property of the drug.

471 Virginia Street.

A SIMPLE METHOD FOR THE MEASUREMENT OF BLOOD-CELLS

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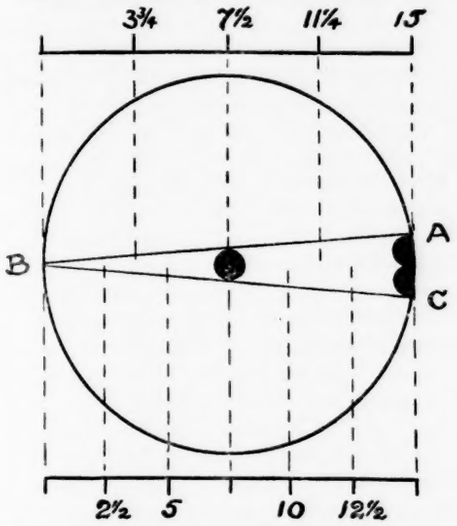
In the microscopic examination of blood it sometimes becomes desirable for purposes of comparison and classification to know, with some degree of accuracy, the size of certain cells. The method about to be described is simple, fairly accurate, and can be used by anyone who cares to expend a little patience in adapting the eye-



Sketch illustrating a simple method for the measurement of blood-cells. View of field, with available measurements in microns, when the radius is divided into halves and thirds. Spun glass A B C giving black line effect and forming gauge.

piece of his microscope for the procedure, and when once accomplished, having a permanent fixture.

It consists in arranging two pieces of spun glass across the diaphragm of the eye-piece so that an acute angle is formed, the apex of the angle coming exactly to one border of the field which is the opening in the diaphragm. The other ends of the spun glass are separated sufficiently so that at the margin of the field they just enclose two normal red blood-cells, one above the other, in apposition, thus making approximately 15 microns.

The spun glass may be obtained by heating a piece of glass stirring-rod in the flame of a Bunsen burner and quickly pulling the ends apart after removing from the flame. A piece of this minute thread may be easily handled by a silver probe, the end of which has been warmed and touched to a small piece of paraffin, a little of the same substance being previously distributed over the diaphragm at diametrically opposite points.

When the final satisfactory adjustment of the spun glass has been made a small piece of paraffin is gently placed over the ends of the same and the heated end of the probe quickly "solders" them permanently in place.

A normal red cell of 7.5 microns will just fit between the lines when in the center of the field, and it requires but a glance to locate the position of a cell in relation to the apex or base of the triangle when it is placed so that both lines touch its edges.

A cell so placed can easily be recognized as being in the middle of the right half of the field, or the middle of the left half of the field, or in the outer, middle, or inner thirds of either half of the field, giving a scale of microns marked in the sketch, which for blood work is particularly appropriate; and a scale for comparison in other cases which may suggest themselves.

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A CASE OF HAIRY TONGUE

M. LEON, M.D.
MT. OLIVE, ILL.

I wish to report a case of "hairy tongue" which came under my observation and treatment a few weeks ago.

History.—The patient, Mrs. W., aged 75, informed me that she had been suffering from chronic indigestion for the last five years. On examination of her tongue I found a black, velvety coating strongly resembling a mass of long, fine hair. The coating was located in the center of the tongue on the papillæ filiformes. A scraping of it was put under the microscope for examination and was found to contain epithelium and an immense number of mycelia. The papillæ filiformes were somewhat hypertrophic.

Treatment.—After applying for several days a strong solution of potassium chlorate, pure hydrogen peroxid, etc., without marked benefit, I scraped off the coating under local anesthesia and applied a 10 per cent. alcoholic solution of mercuric chlorid. This application was repeated daily for two weeks, with the result that the coating has entirely disappeared.

A SIMPLE METHOD OF RECTAL FEEDING OR PROCTOCLYSIS

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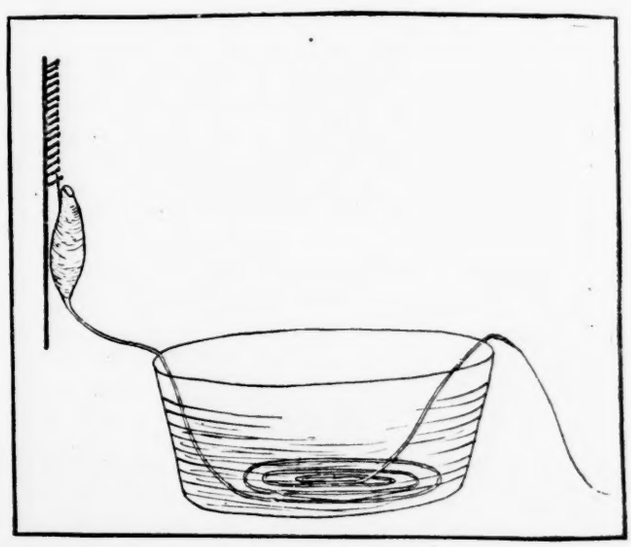
The excellent results obtained in the treatment of peritonitis by proctoclysis, and the number of cases demanding nutrient enemas, have resulted in the devising of various forms of more or less elaborate apparatus for introducing fluids slowly and continuously into the rectum at a constant temperature. For hospital work



Protoclysis apparatus, consisting of an ordinary rubber enema bag, long rubber tube and rubber catheter, a large pan containing hot water in which is coiled the rubber tube for maintaining the proper temperature of the saline fluid; also a simple device for regulating the height of the bag. The apparatus may be used also for rectal feeding.

or when refined instruments can be used any of these give admirable results. But in certain cases occurring outside of hospitals a simple and readily improvised method is sometimes of value.

In a cancerous condition of the stomach demanding rectal feeding, and in a recent case of duodenal ulcer, I

successfully used the following device, and its simplicity may recommend it in emergencies in which a more elaborate apparatus is not obtainable:

Two-inch nails are driven into a small board at intervals of an inch for about two feet. This board when tied to the bed or nailed to the wall gives a means of lowering or raising the enema bag. About fifteen feet of medium heavy tubing is attached to the end of an ordinary two-quart enema bag, and a small rubber catheter is joined to the end of this tube. Near the edge of the bed is placed a pan containing two or more gallons of warm water, the temperature of which is about 100 F. Into this pan the tube passes and is coiled so that about twelve feet of it is immersed in the water. A heavy rubber such as is found in the lavage tube is needed in order that the tubing may not twist itself to the surface as happens with inferior or light weight tubing. The pan should be near the patient so that the rubber pipe and catheter may have only a short distance to pass to the rectum.

The enema bag is then leveled so that the flow shall be about twenty drops a minute. The normal salt solution or nutrient fluid, being warmed to about 99 F. when put into the bag, regains any heat lost during the injection in passing through the coils of tubing in the warm water. As a consequence the fluid enters the rectum at a fairly constant temperature. Once an hour an attendant can add a little hot water until the temperature is "a little warmer than the hand." Three gallons of water in an ordinary dish pan at a temperature of 100 F. in a room where the temperature is 72 F. loses only about four or five degrees in half an hour or longer.

Therapeutics

HYPOSECRETION OF THE THYROID

The disturbances caused by an insufficiency of the thyroid gland will, of course, depend on whether the secretion is diminished or entirely absent. Also, it is logical to believe that certain elements of the thyroid secretion may be diminished while others are normal, or it is even possible that some elements may be increased while others are diminished. Such a supposition will account for the manifold indications both of hypersecretion and hyposecretion. The conditions caused by diminished secretion may be enumerated as follows:

Chlorosis	Epilepsy
Amenorrhea	Melancholia
Obesity	Slow growth in children
Goiter	Cretinism
Eczema	Adiposis dolorosa
Hysteria (depressant forms)	Lipomatosis
Vomiting of pregnancy	Myxedema
Eclampsia	Senility

The theory of hypothyroidea, or a subsecretion of the thyroid gland, has been advocated by some for many years, and now the condition has been generally accepted as clinically recognizable, even when present in small degree. If the secretion is entirely absent in a young child, a cretin results. If it is seriously defective, there is slow and stunted growth. If it is present in larger amount but still much insufficient, juvenile obesity is present, with a phlegmatic disposition, slowed pulse, and a delayed puberty. If there is an undersecretion at puberty (and this occurs most frequently in young girls) we have amenorrhea, perhaps chlorosis, and often peculiar nervous crises, even epileptic attacks. The typical symptoms of hypothyroidea are best recognized and studied in the adult female. If there is absolute absence of secretion myxedema develops. A normally diminishing secretion, such as occurs after 45 or 50 years of age, is shown by symptoms, the most evident being the addition of flesh, especially deposits of fat, a slowly increasing blood-pressure, and a gradual development of connective tissue in various parts of the body. If this secretion diminishes normally as age advances into old age, the skin begins to lose its nutrition and dries and wrinkles, with a tendency to the occurrence of eczemas.

PRINCIPAL USES OF THYROID

The *absence of menstruation,* after it has once developed, without pregnancy or acute or chronic disease, generally points to a diminution of the thyroid and ovarian secretions. If the patient is anemic, iron and ovarian extract should be the treatment. If the patient is not very anemic and tends to put on weight, thyroid is the treatment. The dose of thyroid should be small, not more than 3 grains of the dried extract once a day.

There has never been a satisfactory explanation of the condition of *chlorosis.* For some reason these patients do not metabolize the iron of their food. Large doses of iron always cure these patients. Arsenic does the same, possibly from its stimulation of the thyroid gland, possibly from some unexplained antiseptic action. Sometimes some of the laxative inorganic salts, in small doses, act satisfactorily. Sometimes small doses of thyroid are efficient. It is generally true that if these girls begin to menstruate normally the disease disappears, and thyroid is the best emmenagogue that we possess.

Infantile obesity is best modified by small doses of thyroid, and if recognized early the condition may be inhibited. The disturbance in metabolism that is most frequently improved by thyroid is *obesity.* Thyroid will probably cause loss of weight in every instance provided a sufficient amount is given, but at the same time there is a great nitrogenous loss, and there is always the danger of causing disturbances due to an increased amount of thyroid in the blood, some of which may be serious. It can cause faintness and loss of strength, and a debility which may not be recovered from in a considerable length of time. If weight is being added, especially in women, after 45, small doses of thyroid may prevent it. If the fat is already present, it may take considerable dosage to reduce it. The large doses which were once used for this purpose are not justifiable, and a patient under thyroid treatment for obesity should be very carefully watched, and the administration should cease as soon as any unpleasant symptoms appear. When weight is put on in younger life, especially in women, thyroid is the most efficient treatment, and the dose required is generally not large. The value of combining such treatment with a diet free from sugar and with a diminished amount of carbohydrates, and with physical exercise, should not be overlooked. The dose of thyroid should be 0.20 gm. (3 grains), at first three times a day for a week, then twice a day for another week, and after this once a day will probably be sufficient. To be sure that the thyroid is active, 0.25 gm. (4 grains) of sodium iodid should be administered once during each twenty-four hours. The patient may not begin to lose weight for at least two weeks, and after that some weight should be lost every week, and patients may lose weight even after the treatment has been stopped. The loss of two or three pounds a week should

be considered sufficient and satisfactory. If the excessive weight is hereditary, or has persisted for years, the fat will again return on cessation of the treatment, and in these patients great loss of weight will not be caused by the treatment without the necessity for more thyroid being administered than is safe.

If undesirable fat begins to be deposited before the age of 40, unless there is a marked family tendency to such excessive weight, the thyroid is probably undersecreting. If such deposits of fat occur on the hips, over and under the clavicles, on the upper arms, around the breasts in women, with a feeling of oppression, dyspnea on exertion, and especially if menstruation has ceased, the diagnosis is absolute, that the thyroid is secreting insufficiently. If this condition just described further develops, *adiposis dolorosa* is in evidence, the only difference being that of degree and that the fatty parts are painful. The thyroid is always found to contain a large amount of connective tissue and to be subsecreting in this disease. In the rare instances of general and localized *lipomatosis* the thyroid is probably not perfectly active, although other signs of its inactivity may not be present. Thyroid will always improve the condition of the skin even if it does not inhibit the advance of the disease.

An ordinary *goiter* represents an excess of colloid material or cystic degeneration. The portion of the gland so affected is diseased and undersecreting, but the rest of the gland is generally secreting a sufficient amount for the organism so that symptoms referable to the thyroid are not present. A primary thyroid hyperactivity or hyperplasia may have been present before the colloid excess occurred.

Whether the tendency for the residents of certain regions to develop is due to an absence of sufficient iodin in the water or to some other cause has not been determined. In some regions almost all the women (women being the more susceptible) have enlarged thyroids. But few of them probably, however, show symptoms of thyroidism. Strangers, especially women, going to these regions often readily and quickly develop goiters. Removal from these regions and the administration of small doses of iodid generally quickly cause improvement. Most such patients are very susceptible to thyroid feeding, and will often quickly show symptoms of hyperthyroidism under its administration. Boiling the drinking-water in these regions has sometimes seemed to inhibit the enlargement of the thyroid gland.

Simple goiters are more frequently operated on than formerly, probably because all operations are becoming more popular, but perhaps these large glands caused greater discomfort and disturbance than was supposed. The operation is not as serious when a portion of these glands is removed as when the patient has Graves' disease, but it can never be termed a simple operation. Sudden heart failure may occur during the anesthesia, and any other operation that it is necessary to perform on a patient who has goiter should be done under the most careful anesthesia.

Many *eczemas* of early childhood are often incorrigible until minute doses of thyroid are administered. These are especially the type that occur around the orifices of the body, and when little fissures or cracks in the skin occur. The troublesome eczemas of old age often will not heal with local treatment until small doses of thyroid are added to that treatment. Sometimes the results obtained by such treatment of these patients is most satisfactory

Hysteria of the melancholic depressant type where there is apathy, unwillingness to talk, and general depression, may be improved and cured by the administration of small doses of thyroid. The border-line between this kind of hysteria and beginning melancholia is hard to determine, but the cerebral stimulation caused by thyroid will sometimes prevent the development of insanity. Whether actual melancholic insanity is benefited by thyroid is doubtful, but it certainly is a treatment sufficiently logical to be tried in every case. Dr. A. H. Peabody *(Boston Med. and Surg. Jour.,* Aug. 14, 1910), has shown that 75 per cent. of patients who die with mental disease have abnormal thyroids.

There have been various and many suppositions as to the cause of the persistent *vomiting of pregnancy.* It is certain that if the vomiting persists the patient develops an acidosis, and this cause alone may continue the condition or actually cause death. Whether it is purely reflex or whether there is a metabolic poisoning of the system of which vomiting is a consequence, it seems certain that any method that allows the mother to metabolize her food better, and eliminate the nitrogen excretory products properly, will be of benefit to her. Whether there is often or occasionally a subsecretion of the thyroid during the early months of pregnancy when vomiting is so likely to be in evidence is not known, but many instances have been reported in which the administration of small doses of thyroid has improved such a serious condition. It is certain that the thyroid will increase the nitrogenous output in the urine. It is also certain that the thyroid should hypersecrete during pregnancy. If it does not do so it is acting abnormally, and the vomiting of pregnancy may be an indicator of such subsecretion.

It is certainly advisable, when a woman has given birth to one or more children who have shown subthyroid activity, to administer to her thyroid gland substance during her next pregnancy. Such treatment is logical, and has been successful in producing healthy children. If it is inadvisable to give small doses of thyroid to a pregnant woman or if its results are unsatisfactory, small doses of iodid may be substituted, when it is decided that the patient's own thyroid is not secreting properly.

Many obstetricians now believe that one of the best treatments for *eclampsia* is thyroid. In instances in which it is successful the poisoning is probably a nitrogen poisoning, and eclampsia can occur without serious kidney defect. When a pregnant woman is found to have signs of subsecretion of the thyroid she certainly is in danger of eclampsia at parturition, and the previous administration of thyroid is certainly indicated. A dose of three grains a day, at least during the last month of pregnancy, is advisable. If eclampsia has developed, 1 gm. (15 grains) of thyroid should be given at once and repeated in two hours.

Epileptic attacks developing during some disturbance of menstruation, whether at the time of puberty or at the time of the menopause, and especially if repeated only at the times of the menstrual periods, just before or just after, or at the time when the menstrual period should occur and does not, shows that the cause has something to do with the thyroid. The thyroid gland hypersecretes normally at and before menstruation; if it does not do so, something in the system cannot work as perfectly physiologically. In the kind of epilepsy just described thyroid is the treatment. It should be

administered in small doses, 3 to 5 grains, daily (the size of the dose depending on the symptoms of the physiologic action of the thyroid), during the interval between the periods. When the attack is expected, for a day or two before, bromid treatment may be added. If the thyroid acts unpleasantly, causing palpitation or loss of weight, it need not be given throughout the whole four weeks of the interval, but may be omitted during the first two weeks. Many instances are on record in which this kind of epilepsy has been cured by such treatment.

More or less complete insufficiency of the thyroid in adults causes *myxedema*. This is a rare disease in men, and occurs in more than 80 per cent. of all cases in women, and mostly in those who have borne children. It would seem from such statistical facts, that the gland is inclined to excessively atrophy because it has previously been stimulated, in women, from the periodicity of its increased secretion on account of menstruation, and from its overwork during pregnancy. Myxedema in its full development is, in this country, a rare disease. Partial myxedema, hypothyroidism, is frequent and often unrecognized. In myxedema there are all kinds of nervous disturbances and circulatory disturbances, joint and muscle pains, headaches, itching and tingling. The skin may be dry and harsh. Later, deposits of fat generally occur all over the body. The face is round, full, dull and apathetic. There is a great deposition of mucin in the tissues of the skin giving a feeling of edema but with no pitting. The taste is impaired and perverted. The patient may complain of a bitter, a sour, or some other disagreeable taste, and the digestion is impaired. The patient also may complain of noting a disagreeable odor. There is sluggish mentality, the memory is impaired, and the general disposition may be entirely abnormal to the individual. The patient sleeps a great deal, even in the daytime. There may be hallucinations, even bordering on melancholia. The temperature is generally subnormal, the pulse slow, and the blood anemic, although there may be a tendency to hemorrhages, either from the uterus, the nose, the gums, the bowels, or into the skin. One patient about 50 years old, during the incidence of the menopause, had an attack of profuse bleeding from the nostrils, ears, gums, intestines and bladder, almost to exsanguination. She was cured by thyroid feeding after every other known treatment had been administered and failed.

In myxedema the external genitalia are swollen, amenorrhea is generally present, and the sexual desire is lost. The urine often shows albumin, and may show casts. If the disease is not arrested by proper treatment death is likely to occur from progressive anemia, kidney insufficiency or cardiac weakness. The disease is slow in its progress, but death may occur in five or six years.

The almost invariably successful treatment is thyroid; all of the above symptoms disappearing. The dose should not be large, but if for any reason the treatment is rapidly pushed, the patient should be in bed lest sudden heart failure occur from the large doses of thyroid. As soon as the patient improves, the dose should not be large; a dose of 3 grains of the dried gland substance a day is sufficient, and even this may subsequently be given but every other day, or even less frequently. Sometimes the thyroid gland of such a patient may be stimulated or may recuperate, or perhaps a supernumerary thyroid may develop so that active thyroid medication is needed only intermittently.

In *operative myxedema* in which the thyroid gland has been removed totally, or so much has been removed that the secretion of the remaining portion is insufficient, or in some instances of true myxedema, in which the patient cannot live without continued thyroid treatment, transplantation or implantation of thyroid gland tissue into various organs of the body has been tried, sometimes with success. This same implantation has been tried in cretins, and there are records of success. The younger the patient, the more successful, perhaps, is the treatment, but the whole subject of such transplantation is as yet purely experimental.

Hypothyroidea and partial myxedema, easily recognized when the physician once becomes used to looking for it, is hardly recognized at all by the majority of practitioners. Any one, two or three of the symptoms above described as characteristic of myxedema may be present in a patient, and be due to a subsecretion of the thyroid. It is hardly necessary to enumerate these conditions. Suffice it to say that the unusual addition of weight, irregular fatty deposits, drying of the skin, slowing of the pulse, sleepiness, mental apathy and stupidity, gastro-intestinal disturbances that are unexplainable by organic disease, an abnormal desire for sugar, urinary defects in evidence with some of these other conditions, all point to subsecretion of the thyroid. The treatment is either small doses of thyroid, or an iodid, or both. Premature falling of the hair, or the hair becoming brittle and readily breaking, irregular and unexplainable skin eruptions, especially of the dry, scaly varieties, may many times be improved by judicious thyroid feeding. Sometimes there are joint pains, and in some instances arthritis deformans has been thought to be caused by disturbed thyroid activity, as in these instances administration of thyroid has been of marked benefit. This, however, is not generally the case.

In *cretinous children* the thyroid is either absent, or, if present, contains a small amount of colloid material or is cystic, and there is almost entire absence of thyroid secretion. The curative action of thyroid in cretinism is a demonstrated fact, and the sooner the diagnosis of cretinism is made, the greater the amount of success which will attend the use of thyroid. Unfortunately the diagnosis of cretinism can rarely be made until the child is from 6 months to a year old, and if there is not total absence of thyroid secretion, an infantile myxedema cannot be determined until the child is 2 or 3 years old. If a cretin or a patient with infantile myxedema is not treated until he is several years old the results of such treatment are much less satisfactory. The dose for an infant is not more than .065 gm. (1 grain) of the official thyroid powder, two or three times a day. If the cretin is older, the dose may be larger. Its unfavorable action would be shown by increased cardiac rapidity and loss of appetite. Its favorable action is shown by a diminution of the myxedema; in other words, the puffiness of the skin becomes less, and there is an actual loss of weight. The mental powers should increase, and the hair, nails, teeth and bones should normally grow. The thyroid feeding, as soon as improvement has positively taken place, should then be slightly diminished, and a smaller dose given daily for months and perhaps for years. If unpleasant symptoms of thyroid action occur, the thyroid should be

stopped for a week and then again begun at a smaller dose.

UNCLASSIFIED USES OF THYROID

Thyroid has been used with success in some instances of hemophilia and purpura hemorrhagica, as well as in the irregular hemorrhages of the menopause.

It has been used in chronic rheumatism as well as in arthritis deformans, and has many times been successful in gouty rheumatism, especially where the attacks showed a general disturbance of metabolism, such as at one time an asthmatic attack, at another an indigestion attack, and at another a typical gouty joint attack. Small doses given for a considerable time are often successful in this kind of metabolic disturbance.

Sometimes thyroid acts as a diuretic, and it certainly is an antidote to nitrogenous poisoning in insufficient kidney action. Even uremic convulsions are sometimes kept in abeyance by the administration of thyroid. During a uremic attack the dose of thyroid should be large, as 10 grains of the dried extract three time a day. Such treatment sometimes apparently prevents convulsions, and in some instances seems to aid in saving life.

Thyroid has been used in various skin diseases, sometimes with success. The indication seems to be to stimulate extra secretion of the skin. If there is an acute inflammation or hyperemia, thyroid would not be indicated. Conditions in which it has been successful are the dry chronic eczemas, sometimes in psoriasis, ichthyosis, and in some instances scleroderma.

If not otherwise contra-indicated, whenever there is excessive connective tissue development in any organ—in other words, a sclerosis or a cirrhosis—a small dose of thyroid daily is of benefit. The dose should be so small that it could not cause evident signs of its physiologic activity. In many of these instances small doses of iodid, given daily for long periods, may be of as much benefit.

Some clinicians have certified to, and even proved, in certain instances, the value of thyroid in inhibiting or causing resorption of carcinomatous growths. This is especially true of uterine carcinoma. The majority of investigators, however, have not found this treatment successful.

THE ADMINISTRATION OF THYROID

Unless thyroid is administered in large doses to combat an intoxication or toxemia, as in puerperal eclampsia or uremia, a therapeutic dose should cause no evident symptoms. In other words, if thyroid is to be administered continuously for its continued physiologic effect it should give no more symptoms than does the normal thyroid secretion. The amount administered per day should be small enough to represent the amount that would reach the blood from a normal thyroid gland. This means in the course of twenty-four hours very little thyroid secretion. If the amount that we administer causes symptoms of thyroidism such as palpitation, hot flashes, headache and sleeplessness, or any of the other symptoms mentioned as symptoms of Graves' disease, the amount given is excessive and should be diminished. It should also be recognized that the administration of thyroid for a short time, even in small doses, will doubtless stimulate a temporarily sluggish thyroid gland to more perfect action. Consequently, a given dose not at first too large becomes gradually too large, and later not needed. It also seems to have been proved that small doses of iodin, as represented by an iodid, is a stimulant to a sluggish thyroid, and should perhaps be the treatment first given when there are evidences of hyposecretion of the thyroid. It has been shown that the thyroid may become active, if it obtains a little more iodin. If 0.10 or 0.20 gm. (1½ to 3 grains) of iodid a day does not soon render the thyroid more active, then thyroid substance should be given. The signs of excessive thyroid administration which are not as self-evident as those above mentioned are loss of appetite, loss of weight, tendency to perspire too freely, and too low blood tension.

Large doses of thyroid may cause nausea, dizziness, and, if quickly absorbed, faintness. There is probably no direct acute poisoning from thyroid, although large amounts have been known to cause convulsions and even death from shock, *i. e.*, by the toxic effect on the heart and the enormous vasodilator effect, as has been seen in operations for Graves' disease when the thyroid has been too much manipulated and a large amount of its secretion has been squeezed into the circulation.

The treatment of acute thyroid intoxication would be the hypodermatic or intravenous use of epinephrin or other suprarenal vasopressor substance, the administration of atropin and strychnin. Possibly good treatment would be a venesection from one arm while physiologic saline was transfused into the other arm.

Contra-Indications.—Any symptoms similar to those of Graves' disease should ordinarily prohibit the use of thyroid. Also, if during the administration of thyroid excessive nervousness, sleeplessness, palpitation, and loss of weight occur, the administration should be stopped. Ordinarily a poor condition of the circulation and a soft and weak pulse should prevent its use. Serious nervous and cerebral excitation should also ordinarily prevent its use.

Official Preparation.—Glandulæ thyroidæ siccæ, desiccated thyroid glands, is a yellow powder prepared from the thyroid glands of sheep. It has a disagreeable, meaty smell, and is partially soluble in water. This preparation of course contains the active principle of the thyroid gland, but its activity depends on the amount of iodin content, and this is variable. The dose varies from 0.03 gm. (½ grain) to 1 gm. (15 grains), depending on the frequency and the object for which it is used. Thyroid may also be obtained in tablets which vary in size and strength.

Unofficial Preparations.—Iodothyrin is an artificial preparation recommended by Baumann to represent thyroid substance, and occurs as a brown powder, which contains 9 per cent. of iodin and 0.5 per cent. of phosphorus. This preparation has not been found so active or so efficient as thyroid gland substance, and consequently should not be used when thyroid is indicated, provided thyroid substance can be obtained. The dose is slightly larger than that of the above official preparation.

Various antithyroid preparations may be obtained. These are of course indicated when there is too much thyroid secretion. One preparation is termed "thyroidectin," and is prepared from the blood of thyroidectomized animals. It is a reddish-brown powder, and may be obtained in capsules each of which contains 5 grains. The dose is one to two capsules, three times a day.

Moebius' antithyroidin is a serum obtained from the blood of thyroidectomized animals, the dose of which is from 2 to 10 drops, three times a day.

The milk of thyroidectomized goats may be administered fresh from the animal.

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[For other information see second page following reading matter]

SATURDAY, DECEMBER 24, 1910

RELATIVE IMPORTANCE OF BOVINE AND HUMAN TUBERCLE BACILLI IN HUMAN TUBERCULOSIS

Since Koch's sensational announcement in 1901, to the effect that human and bovine tuberculosis are not identical, and that the occurrence of bovine tuberculosis in man is so rare that no special protective measures are indicated with respect thereto, numerous investigations have been made in regard to the relationship of bovine and human tubercle bacilli. An especially valuable study of this question has been made recently in the research laboratory of the department of health of New York City.[1] Park and Krumwiede point out that it is of great importance to know as definitely as possible the actual percentage of bovine infection in man, because if bovine tuberculosis occurs to an appreciable extent steps must be taken to prevent the milk-supply, especially of large cities, from carrying tubercle bacilli. In order to contribute to the solution of the problem in question, the New York investigators have studied carefully the types of bacilli obtained from a large number of unselected cases of different types of tuberculosis and representing well the average conditions of exposure to infection. An enormous amount of work has been done and the results secured are of great value. The most improved technical methods were used.

Park and Krumwiede conclude that tubercle bacilli isolated from man fall into two groups, the human and the bovine. Each type presents peculiar cultural and biologic characteristics, most of the cultures grouping themselves around two extremes. There is no conclusive evidence in favor of any rapid change of type. The actual number of cases examined is 436—the largest number so far covered in a single investigation; 297 occurred in persons over 16 years of age—278 being pulmonary—and of these cases only one, a case of renal infection, gave bacilli of the bovine type. Children between 5 and 16 years furnish 54 cases, nine being of the bovine type so far as the bacilli go. Eighty-four cases were in children under 5 years, and of these twenty-two had bovine bacilli.

These results are in general harmony with results obtained previously. Their cases, added to cases similarly studied and recorded in literature, give a total of 1,040 cases of human tuberculosis from which pure cultures of tubercle bacilli have been obtained and identified as either bovine or human in type. Dividing these 1,040 cases into three groups with respect to the age of the patients, we find that Park and Krumwiede place 686 cases in the first group, which comprises the patients of 16 years and over, and nine of these patients gave bacilli of the bovine type; in the second group, which covers the ages between 5 and 16, are 132 cases, thirty-three with bovine bacilli; and in the third group, which includes the children under 5, are 120 cases, fifty-nine of which are of the bovine bacillary type.

If not a single case of pulmonary tuberculosis have bacilli of undoubted bovine type been found; there are 568 cases of pulmonary tuberculosis in the first group and of these one case figures as furnishing bacilli of questionable bovine type.

The larger proportion of the cases with bovine type consists of the infections of the abdomen and of the glands of the neck. In 15 per cent. of the fatal cases in children under 5 bovine bacilli were found.

It thus becomes evident, from the results which have been briefly outlined here, that the bovine type of the tubercle bacillus plays a significant and by no means a negligible part in the etiology of tuberculosis in children and that the efforts at prevention of this disease clearly must include the sources of bovine bacilli.

1. Park, William H., and Krumwiede, Charles, Jr.: The Relative Importance of the Bovine and Human Types of Tubercle Bacilli in the Different Forms of Human Tuberculosis, Jour. Med. Research, 1910, xxiii, 205.

A Merry Christmas to All! Let no one slight the ancient custom of mirth and cheer; but if there be any whose existence has grown stale—who have ceased to renew the fresh wonder of life by sharing its simple joys with children and the child-like—who have forgotten or ignored that wisdom, deeper than the learning of the schools, which makes life worth while—to such we wish a Merry Christmas in double and triple measure. This is the day of all others to observe what Stevenson called the most underrated duty in the world—the duty of happiness. Beauty for ashes, the oil of joy for mourning, the garment of praise for the spirit of heaviness—a Merry Christmas!

WILLIAM PRYOR LETCHWORTH, REFORMER AND PHILANTHROPIST

In Mr. William Pryor Letchworth, who has just passed away at the age of eighty-eight years, the medical profession has lost a helper of unusual spirit. He stood between science and that helpless portion of the population that needs state care, and taught the people of New York State how to spend their money so as to give the best possible scientific and humanitarian aid to its dependents.

In his early life a business man, he earned a fortune, and all those who were associated with him shared his prosperity. Then, retiring from business, he devoted nearly fifty years of his life to practical philanthropy. Seldom does one find such business acumen, such scientific grasp of conditions and such brotherly love combined as salient traits in one man; and these, combined with a love of the fine arts, and the power to attract kindred souls, formed a character whose qualities strengthened the fibers of our civic life.

Mr. Letchworth was for ten years, from 1878, president of the State Board of Charities, and from that time until his death every branch of the work has felt the effect of his intelligence and persistent effort, and out of his wise administration have grown changes for the better in the care of the poor in county houses, the blind, orphan and destitute children, and juvenile delinquents.

He had always been keenly alive to the suffering and wrongs of the insane and epileptics as they were cared for in years gone by in public institutions. In order to understand the subject thoroughly, he spent two years in Europe, visiting institutions and hospitals in every country, and when in 1886 he was appointed chairman of a commission to select the site for an asylum for the insane in northern New York, he not only chose what experts pronounce to be the finest site for such an institution in this country, but suggested many ideas which led to improvement in the comfort of the patients.

Perhaps the work with which his name will always be most intimately associated is Craig Colony for Epileptics, which grew practically out of his ideas. Imbued with the ideas of Bielefeld, Germany, where the epileptic lives a useful life in a village of epileptics, Mr. Letchworth guided the state in establishing in the Genesee valley that remarkable community, composed wholly of epileptics and their helpers, who live in a model colony, doing farm and garden work, housework, brick-making, and learning and practicing the trades needed in village life.

The value of a work like Mr. Letchworth's lies in its power of coordinating other men's work. He was like the expert critics employed by great business concerns to detect wasteful and inefficient methods, and substitute time-saving and labor-saving systems. The philosopher, who criticizes the lack of coordination in the loose business of life, does great service to his generation; but rarely does one meet a philosopher who leads the way to practical reform. This was what Mr. Letchworth did for his state in every public enterprise that had to do with the unfortunate. He found out how to remedy existing evils, and then applied his brains and his fortune to making needed reforms go through.

"THERE'S A REASON"

Grape-Nuts is a breakfast food and Postum Cereal is a substitute for coffee, both manufactured by the Postum Cereal Company, Battle Creek, Mich. This concern has applied the "patent medicine" methods of advertising to the exploitation of food products. Are you threatened with appendicitis? Use Grape-Nuts! Have you "heart trouble and dizzy headaches?" Try Postum Cereal! Do you suffer with "loose teeth?" Eat Grape-Nuts! And so on. Not, of course, that the recommendations are so crudely made as those just given. In fact, like most "patent medicine" advertising, the most dangerous and mendacious claims are those made by implication. For instance, the company does not say frankly that Grape-Nuts is a "brain food"; not at all. Instead: "No one, until the inventor of Grape-Nuts, thought of making a special food for the brain and nerves." It is probable that the Postum Cereal concern has in its advertisements given greater publicity to more pseudo-scientific twaddle than was ever before inflicted on a long-suffering but patient public. But "There's a Reason." It has sold the goods!

Five years ago *Collier's Weekly* refused to accept the advertising of the Postum Cereal Company on the ground that the products were being exploited by "patent medicine" methods if not actually as "patent medicines." In July, 1907, that publication called attention to the following statement made by the Postum concern:

> "It is a practical certainty that when a man has approaching symptoms of appendicitis, the attack can be avoided by discontinuing all food except Grape-Nuts and by properly washing out the intestines."

Collier's characterized such claims as "lying and, potentially, deadly lying." The manufacturer, as a "come-back," had advertisements printed all over the country accusing that publication of attacking his product "for the purpose of forcing him to advertise." As this practically amounted to charging *Collier's* with attempting to blackmail the Postum Cereal Company into advertising, the owner of that weekly at once brought suit for libel. The verdict that has just been returned in Mr. Collier's favor is said to be the largest ever rendered in a libel suit in this country.

Collier's is to be congratulated. It is a common thing for the manufacturers of "patent medicines" and similar products, when their preparations or methods are criticized, to intimate that the journals exposing them have had an ulterior motive in so doing. It is

seldom, however, that such manufacturers are so commercially tactless as to make their charges definite, and in black and white.

The Postum Cereal Company, which is said to spend a million a year in advertising, is attempting to offset the result of the verdict by an advertising campaign in which the actual cause of the suit is carefully kept in the background while the points regarding the products themselves are greatly magnified. As a matter of fact, the products, as such, did not enter into the case at all, the methods of exploitation and the claims made for them being the essential matter.

Why does not the Postum Cereal Company explain that the Food and Drugs Act has made it necessary for it to modify the claims made on the Grape-Nuts package? Why does it not mention that some of its testimonials have been rewritten and paid for? Why does it carefully conceal the fact that the "famous physician" who wrote the Postum testimonial is a "poor old broken-down homeopath, who is now working in a printer's establishment" and who received ten dollars for it? These are points that the public is entitled to know so that it may place a just estimate on the worth of the testimony offered. Why is the Postum Cereal Company silent? Well, again: "There's a Reason."

THE DEPARTMENT OF AGRICULTURE AND ITS WORK

When a Department of Agriculture was proposed, nearly twenty-five years ago, exactly the same objections were raised to its establishment that are now being made to the organization of a federal department of health, except that, as no great fortunes were being made by selling nostrums and cure-alls to or for cows, horses, pigs and chickens, the opposition to the establishment of a department of agriculture did not come from quacks, fakers and swindlers. With this exception, however, the objections were the same: the rights of the state were being invaded; the government was taking up work which did not belong to it; the project was simply an excuse for the expenditure of large sums of money; the people did not approve of it; its establishment would be of no value, etc., etc. The manifold and highly valuable activities of the United States Department of Agriculture at present constitute a striking refutation of the objections made to its establishment. A copy of Circular No. 721 of the Department of Agriculture shows the bulletins, circulars and reprints issued by the Department in the single month of November, 1910. These publications are of interest not only to the farmer but also to the farmer's wife and children, and in many cases, to the entire community. In the list are found such topics as these: some insects injurious to forests; life-history of the codling-moth; field studies of the crown-gall and hairy-root of the apple-tree; experiments in blueberry culture; insects which kill forest trees, character and extent of their depredations and methods of control; directions for the use of black-leg vaccine; a review of some experimental work in pig-feeding; the tapeworms of American chickens and turkeys; tuberculosis of hogs, its cause and suppression.

Twenty-five years from now, when the United States shall have taken its place with other civilized nations in public health work and when the federal government has come to recognize officially the fact that the life of a human being is as much a matter of government concern as the life of domestic animals, we shall probably have a national Department of Health issuing a monthly list of publications with titles something like these: some parasites injurious to school children; life-history of the typhoid bacillus; field study of infantile poliomyelitis; experiments in child culture; bacteria which kill factory employees, character and extent of their depredations and methods of control; directions for the use of typhoid vaccine; a review of some experimental work in infant-feeding; the tapeworms of American citizens; tuberculosis of children, its cause and suppression.

Such work will bring even more benefit to the people in the next twenty years than the splendid work of the Department of Agriculture has secured in the past twenty years.

Current Comment

OPTOMETRY BILLS IN STATE LEGISLATURES

Legislatures in thirty-two states will convene the first week in January. In about eighteen of these states, according to the statements made in "optometry" publications, bills providing for the appointment of boards of examiners in "optometry" will be introduced, on the plea that they are intended for the protection of the public against incompetent and untrained spectacle fitters and will supplement medical practice acts. The plan of campaign usually followed by the promoters of these bills is to secure, before the bill is introduced, the endorsement of as many physicians as possible, and then to assert before legislative committees that the bill "has the endorsement of the leading physicians of the state."[1] If the real purpose of the bills was to require a higher standard of training and education among opticians, there would be no objection to them, provided schools of instruction for opticians were properly supervised. Experience in every state in which these bills have become laws, however, has shown that as soon as the "optometrist" received the sanction of the state, in the form of a license, he immediately placed himself before the public as a "Doctor of Optometry" and as one competent, not only to correct errors of refraction by lenses, but also to treat any diseases of the eye, no matter what the cause. With the development of this business a number of purely commercial "schools"

1. See page 2253, this issue.

have sprung up, many of them diploma mills, giving "correspondence courses." These "colleges" are turning out large numbers of "graduates." Instead of being a movement for the protection of the eyesight of the people, as claimed by its supporters, it has become a campaign for the recognition, by the state, of a horde of uneducated, untrained men, who, under the title of "Doctors of Optometry" claim to be competent to treat all diseases of the human eye—a work which to-day requires not only a complete course in modern medicine, but special and additional training as well. This pernicious legislative crusade should be opposed by physicians everywhere and the real facts should be placed before the legislatures and the public. Especially should physicians refrain from signing petitions or endorsing bills without realizing their true import. This caution is particularly necessary at present in view of the activity of the advocates of these measures.

THE NEW CHILDREN'S JOURNAL

An announcement was recently made in these columns concerning the new journal to be published by the American Medical Association—the *American Journal of Diseases of Children*.[1] The initial number is now on the press and will be issued promptly on the first of the year. In its articles, in the character of its editorial board and in its mechanical features, this journal will be the equal and a worthy companion of the other special journal published by the American Medical Association, *The Archives of Internal Medicine*. It is not a commercial enterprise—it is merely another effort of the Association to advance scientific medicine, and especially scientific medicine in America. Already an encouraging number of subscriptions have been received for the new journal. One progressive physician in sending in his subscription says: "I take great pride in the *Archives of Internal Medicine*, in THE JOURNAL of the American Medical Association and in other publications coming from your press, and I want your baby book from the start." In order that his file of the new journal may be complete, every physician who contemplates taking it should likewise begin his subscription with the first issue, and thus avoid the annoyance of ordering back numbers, which are not always easily supplied.

MEDICAL ADVERTISING IN LAY JOURNALS

As has often been said—and truthfully—printer's ink is the life-blood of quackery. Debar the advertisements of medical charlatans from newspapers and magazines and these frauds would become a negligible evil. To physicians who know the falsity of the quack's claims, the cruelty of his promises and the fraudulence of his methods, it is an ever-present wonder how reputable and honest publishers can accept the advertising of the nostrum monger and the quack. In many cases there is no doubt that newspaper and magazine owners purposely close their eyes to the evils of this kind of advertising copy because of the enormous revenue it brings in. In many more cases, however, the advertisements are accepted in good faith and in the belief that the claims made, while doubtless exaggerated, are not more so than those made by advertisers in other lines of business. These remarks are prompted by looking at two pages from the *Agricultural Epitomist* sent us by a correspondent. On one of the pages is a half-page advertisement of as bold and impudent a medical swindle as often appears. It deals with "Professor Samuels," whose methods and claims are discussed in the Pharmacology Department[1] of this issue. On the other page is an editorial comment under the heading "Advertising Talks" in which the following statement occurs: "You know advertised articles are all right because they have stood the test—and besides, the advertisers are backed by your publisher's guarantee." To physicians it may seem unthinkable that a rational human being could honestly be willing to "guarantee" such a fake as the Samuels "treatment" of all diseases "through the eye." Yet we believe it is done in good faith. Samuels doubtless submitted to the publisher a bushel or two of testimonials and to the lay mind a testimonial carries with it a conviction that no amount of argument can overthrow. We believe that in this case, as in many other similar ones, what the publisher lacks is judgment rather than principle.

RECOMMENDATIONS OF THE SURGEON-GENERAL OF THE NAVY

The annual report of the Surgeon-General of the United States Navy, recently issued, forms a volume of nearly 200 pages and reviews the work of the Bureau of Medicine and Surgery for the past year. The substance of the report is found in the twenty-one recommendations which form its conclusion. Many of these relate to purely technical matters connected with the administration of the Navy, but some of them are of general medical and scientific interest. Among the recommendations are: that the ability to swim well be required hereafter as a prerequisite for officers and men in the Navy and Marine Corps; that a naval medical reserve corps be established; that dentists commissioned as officers of the lower grades be provided; that venereal prophylaxis, as practiced in Asiatic and Atlantic fleets, be enforced throughout the entire service, both ashore and afloat; that vaccination against typhoid fever be extended to the entire personnel of the Navy under the age of 50 years; that the bubbling-spring device for drinking-fountains be adopted for the entire service; and that Congress be asked for an appropriation to build two suitable hospital ships. The report contains much interesting material, including condensed reports from naval medical officers in all parts of the world.

Differential Diagnosis of Syphilis and Psoriasis.—During the course of an eruption of psoriasis it is not unusual to find lesions on the penis, glans, and scrotum, in men, and on the vulva in women. The lesions in these situations are atypical owing to the moisture of the parts, the scales being soft and fragile, not hard, dry, or scaly, as in ordinary psoriasis. These lesions may be mistaken for mucous syphilides, but the presence of patches of typical psoriasis on the knees, elbows, etc., will settle the diagnosis.—C. F. Marshall, in the *Practitioner*.

1. See advertising page 37.

1. Page 2248.

Medical News

ARKANSAS

The New Sanatorium.—The new Arkansas Tuberculosis Sanatorium, Booneville, is nearly filled to its capacity. At the beginning of the month there was room only for ten additional patients. The capacity of the institution is 74.

Suggest Removal of Hospital.—The board of trustees for the State Charitable Institutions will, it is reported, recommend to the governor and legislature the removal of the State Hospital for the Treatment of Nervous Diseases from Little Rock.

County Election.—At the annual meeting of the Prairie County Medical Society, held in Hazen, Dr. James C. Gilliam, Des Arc, was elected president; Dr. H. T. Rhodes, vice-president; Dr. James Parker, Devall Bluff, secretary, and Dr. William W. Hipolite, Devall Bluff, treasurer.

Antituberculosis Society Organized.—The Antituberculosis Society of Jefferson County was organized at Pine Bluff, December 1. J. L. Caldwell presided at the meeting and Ephraim Frisch acted as secretary. Drs. John S. Jenkins, William S. Stewart, William H. Blankenship, all of Pine Bluff, make up the committee for medical aid.

GEORGIA

Ambulance for Hospital.—The Atlanta *Georgian* gave a benefit performance at the Grand Opera House, December 23, the proceeds of which are to be applied to the purchase of an automobile ambulance for the Grady Hospital.

Physician Imprisoned.—For failure to pay the fine of $1,000 imposed on him in the Chatham Superior Court for illegal prescription of cocain, Dr. Walter W. Lee, Savannah, is said to have been committed to jail, November 25.

Money for State College.—Citizens of Augusta have subscribed $27,845 for new buildings for the Medical College of Georgia, Augusta, and for the hospital connected with the institution. The citizens have agreed to raise $50,000 toward the new buildings. A mass meeting was held in Augusta, December 11, to promote this worthy object.

Personal.—Dr. Howard J. Williams, Macon, has been appointed a member of the advisory board of the Southern Health Conference.——Dr. Thomas J. Collier Griffin, who was operated on recently in Atlanta, is reported to be greatly improved.——Dr. John P. Atkinson, Milledgeville, has been appointed councilor of the Sixth District Medical Society, vice Dr. T. Ellis Drewry, Griffin, resigned.

ILLINOIS

Hospital Site Donated.—Walter Farwell, Lake Forest, has donated to the recently organized Lake Forest Hospital Association an acre of land for a site for the hospital to be erected next spring.

Personal.—Dr. George M. French, Peoria, has been appointed supreme medical director of the Court of Honor, vice Dr. James E. White, deceased.——Dr. Robert C. Bradley, Peoria, has been reelected physician of Peoria County.——Dr. E. E. Nystrom has been named assistant physician of Peoria County.

State Board and Anterior Poliomyelitis.—The September issue of the Bulletin of the State Board of Health is devoted to the consideration of acute poliomyelitis, and includes articles by Dr. Israel Strauss, New York City, on "Pathology;" by Dr. Simon Flexner, New York City, on "Experimental Poliomyelitis;" "A Review of the Literature of 3,523 Cases," by Dr. Frank E. Coulter, Omaha; "Acute Poliomyelitis," by Dr. J. S. Fowler, Edinburgh, Scotland; "Surgical Treatment of Infantile Paralysis," by Dr. Max Herz, Sydney, Australia, and "Reports of Epidemics," by Drs. John M. Armstrong, St. Paul; Colin K. Russel, Montreal, and C. A. Anderson, Stromsburg, Neb.

Chicago

Personal.—Dr. Frank Allport is spending several weeks in New York and other eastern cities studying the work done in the various eye and ear hospitals.——Dr. Oscar C. Willhite has resigned as superintendent of the Cook County Institutions.

Dr. Holt in Chicago.—Dr. L. Emmett Holt, professor of diseases of children in the Medical Department of Columbia University, New York City, gave the annual address before the Chicago Pediatric Society, December 17, on "A Study of 300 Cases of Acute Meningitis in Infants and Young Children."

Resolution on Illinois State Board of Health.—The secretary of the Illinois State Board of Health recently requested the Chicago Medical Society to investigate the charges which had been made against the state board. The council decided that it had no official jurisdiction over the State Board of Health or its members and adopted the following resolution:

Resolved, That it is the sense of the council of the Chicago Medical Society that any official action on its part on the question of the attacks made on the state board would be undignified and unjustified by the powers of this body, as well as an implied reflection on the state board, which would be unwarranted by any evidence thus far submitted against said board.

INDIANA

Charges Against Physician Dismissed.—The State Board of Medical Examination and Registration, at its meeting in Indianapolis, December 6, dismissed for want of sustaining evidence, an affidavit filed against Dr. George M. Freeman, Shoals, in which he was charged with criminal practice.

Prevention of Ophthalmia of the Newborn.—A number of physicians of the state met December 15, at the office of Dr. John N. Hurty, secretary of the State Board of Health, and decided to support a bill requiring compulsory treatment of the eyes of all infants at birth by physicians and midwives. The draft of a bill for that purpose was intrusted to a committee composed of Drs. John N. Taylor, Crawfordsville; Moses S. Canfield, Frankfort; E. Grove Anthony, Indianapolis, and George F. Keiper, Lafayette.

Antituberculosis Propaganda.—The Indianapolis Board of Health, to arouse interest in the scientific methods of prevention of tuberculosis, arranged a mass meeting, December 12. Dr. Charles O. Probst, Columbus, secretary of the Ohio State Board of Health, delivered the principal address, illustrated with stereopticon views, which showed the different stages of the malady, methods of stamping out the disease and also illustrations of the open-air school rooms which are in successful operation in many large cities. The mayor presided and addresses were delivered by Dr. Charles S. Woods, city sanitarian, and others.——The Indiana Branch of the American Red Cross Society has built several cottages at the Indianapolis City Hospital Tuberculosis Colony, and similar cottages in other cities in the state, and has also assumed charge of twenty-five individual tuberculosis cases.

MARYLAND

Baltimore

Well-Known Chemist Dies.—Mr. Louis Dohme, head of the firm of Sharp and Dohme, manufacturing chemists, died in Baltimore, December 12, from neuritis, aged 72. He was a graduate of the Department of Pharmacy of the University of Maryland.

The Johns Hopkins Fund.—The Johns Hopkins Fund now amounts to $610,495. In order to secure the $250,000 offered by the General Education Board of New York, it is necessary to increase this amount to $750,000 by January 1. The money raised is intended to meet the expenses of new buildings, and the removal of the institution to the surburban site at Homewood.

New Staff of Bayview.—The reorganization of the Medical Department of Bayview will take effect January 1. Dr. Thomas R. Boggs has been appointed physician-in-chief; Dr. Arthur M. Shipley, surgeon-in-chief; Dr. Gordon Wilson, physician-in-chief of the Tuberculosis Hospital; Dr. H. D. Purdon, physician-in-chief of the Hospital for the Insane, and Dr. Milton C. Winternitz, pathologist-in-chief.

Personal.—Dr. Caleb W. G. Rohrer has been elected a member of the Royal Society of Arts, London.——Dr. Thomas R. Boggs has resigned as resident physician of Johns Hopkins Hospital and Dr. Frank J. Sladen has succeeded him. Dr. Franklin Webb Griffith, first assistant gynecologist, has resigned and has been succeeded by Dr. John A. Sperry.——Dr. William J. Schmidt has been appointed assistant bacteriologist to the health department, vice Dr. Frederick V. Beitler, Halethorp, resigned.

MISSOURI

Acquitted of Assault.—Dr. Thomas J. Massey, Lockwood, charged with assault on a stockman of that place, was acquitted by a jury, December 2.

Adopts Firework Ordinance.—An ordinance has been passed by the city council of Kansas City prohibiting the use of fireworks in that city except at public exhibitions which are to be regulated under special permits.

Drinking Cups to Go.—The Board of Education of Kansas City, at its regular meeting, December 1, voted to abolish drinking cups in the ward schools. Bubbling fountains are to be installed to take their place.

Seek **New Location for Tuberculosis Hospital.**—Because of the inadequate supply of drinking water and the absence of sewerage facilities at the Buchanan County Farm, the county court has decided not to permit the location of the proposed tuberculosis hospital at that place. The president of the local antituberculosis society has been advised of the decision.

St. Louis

Hospital **Completed.**—The directors of the Barnard Free Skin and Cancer Hospital (St. Louis Skin and Cancer Hospital) announce that the new hospital has been completed, and that formal dedicatory exercises and inspection were held December 20.

Vaccine Virus Pure.—The report of the city bacteriologist and Dr. George Dock of Washington University states that the investigators examined forty-five tubes of vaccine virus, and found nothing to justify the charge that three cases of tetanus among school children had been due to the virus.

St. Louis Medical Society Election.—The annual election of the St. Louis Medical Society, November 25, resulted as follows: president, Dr. Robert E. Schlueter; secretary, Dr. Frederick C. E. Kuhlman; councilors, Drs. Carroll Smith, John McI. Dean and Joseph Grindon, and delegates to the state association, Drs. J. Henry Amerland, William W. Graves, George Homan, Cyrus E. Burford, Vilray P. Blair, Richard H. Fuhrman, Robert M. Funkhouser, Albert F. Koetter and Clarence M. Nicholson.

KENTUCKY

Personal.—Dr. Dunning S. Wilson, director of the Louisville Tuberculosis Dispensary for three years, has been elected to succeed Dr. A. M. Foster as medical officer of the tuberculosis sanatoria of Louisville at Hazelwood and Waverly Hills. This will place Dr. Wilson in control of the entire tuberculosis work of the city.——The following physicians of Paducah have been elected to office: Dr. H. P. Lynn, city physician; Dr. R. L. Fisher, meat and milk inspector, and Drs. Benjamin F. Bradbury and James T. Reddick, members of the board of health.

New Vital Statistics Law.—The new vital statistics law for Kentucky goes into effect January 1. Dr. W. Lucian Heizer, New Haven, has been appointed state registrar with headquarters at Bowling Green. Announcement has been made of the appointment of registrars for the various magisterial districts in Jefferson County. Dr. William E. Gary, the milk and dairy expert of Louisville, now connected with the city health department, will be the Louisville registrar. Dr. Benjamin W. Smock, county health officer, will have general supervision over the various registrars in the county.——Undertakers will hereafter receive burial permits from the registrar instead of from the health office as formerly. The registrar will receive 25 cents for each permit issued.——Physicians will receive 25 cents for each birth and death return.——County registrars will report at stated intervals to the state registrar, who will file the reports with the county clerk, to be kept in a fire-proof vault in his office. The county clerk is to receive a fee of 50 cents for each certified copy of a birth or death certificate. Registrars must deposit fees with the county treasurer, who will make payments once a year, by order of the fiscal court, on a voucher to be made out by the state auditor.

NEW YORK

Personal.—Dr. Clayton K. Haskell, surgeon-in-chief of the State Soldiers' and Sailors' Home, Bath, resigned, December 10.——Dr. Bradley F. Many, Port Jefferson, while making a professional call early in the morning of December 5, narrowly escaped death from exposure in a blinding snowstorm.

Health Lecturers Appointed.—State Health Commissioner Eugene H. Porter has appointed Dr. H. L. Wheeler of New York and Dr. W. A. White of Phelps as lecturers and consultants on oral hygiene to the State Department of Health. Drs. Wheeler and White with the medical officers of the state department will deliver a series of lectures throughout the state on various subjects pertaining to public health.

New List of Reportable Diseases.—The list of diseases that should be reported to the State Department of Health has been amplified and now includes the following: anterior poliomyelitis, anthrax, bubonic plague, cancer, cerebrospinal meningitis, cholera, diphtheria, hydrophobia, leprosy, measles, ophthalmia neonatorum, pellagra, pneumonia, scarlet fever, small-pox, tetanus, pulmonary or laryngeal tuberculosis, typhoid fever, typhus fever, whooping cough and yellow fever.

New York City

Personal.—Dr. Abraham Jacobi has received the honorary degree of M.D. from the University of Bonn, from which he obtained his first degree fifty-nine years ago; he has also been elected an honorary member of the Medical Society of Berlin on the occasion of its semi-centennial celebration.——Dr. Eugene L. Fisk, medical director of the Provident Saving Life Assurance Society, has been elected secretary of the organization.

Verdict Against Physicians.—An unusual case has just been heard before the Queens County Supreme Court, where action was brought against Drs. Pedro Francko and T. Grover de la Hoyde for performing an unauthorized autopsy on the body of a woman who died in St. Joseph's Hospital. The action is said to have been undefended and the jury rendered a verdict of $8,000 damages. It is stated that this is the first case of its kind tried in this state.

Hospital Bureau of Standards and Supplies.—The executive committee of this organization has presented the first annual report for the fiscal year ended September 30, 1910. This bureau was established under an agreement to which at the present time about fourteen of the largest hospitals in the city are parties. The object of the bureau is standardization and savings in the purchase of hospital and institutional supplies. The result of their first seven months' work confirms the soundness of the principle on which this organization was founded, namely, that standardization and combination in purchasing are of benefit to hospitals as well as in the business world. Very considerable savings have been effected on purchases made under agreements negotiated by the bureau. As time goes on and more institutions enter the membership, the usefulness of the bureau will become more evident. The committee confidently recommends the bureau to hospitals which have not already become affiliated. There is also a non-resident membership contemplated for hospitals outside of the city of New York.

NORTH CAROLINA

Personal.—Dr. William P. Ivey, Lenoir, was seriously injured in a runaway accident, December 8.——Dr. Buxton B. Williams, Greensboro, has had plans prepared for a three-story sanitarium.

The Betterment of Professional Conditions.—The State Board of Health and the State Board of Medical Examiners have organized a joint committee which is conducting a vigorous campaign for the betterment of professional conditions in the state. Dr. Richard H. Lewis, Raleigh, and Dr. George G. Thomas, Wilmington, represent the State Board of Health, while the State Board of Examiners is represented by Drs. Lewis B. McBrayer, Asheville, Benjamin K. Hays, Oxford, and James L. Nicholson, Richlands. Dr. McBrayer is secretary of the joint committee. An active canvass is being made to secure additional enactments providing for higher educational requirements of prospective students of medicine, the repeal of the clause in the present medical law which permits licensing of illiterate doctors for "limited districts," and increased appropriations to render more efficient the work of the State Board of Health.

OHIO

Returned from Europe.—Drs. Henry J. Gerstenberger and Harry B. Kurtz, Cleveland, have returned from Europe.——Dr. L. Loring Brock, Washington Court House, who has been in Europe for several months, sailed for home, December 10.

Personal.—Dr. Paul Bethards, Toledo, has been elected fleet surgeon of the Interlake Yachting Association.——Dr. Claude E. Hoover, Edgerton, has been appointed surgeon for the Lake Shore System at Cleveland.——Dr. John Costello, Sidney, has been selected as superintendent of the new tuberculosis hospital at Lima for Shelby, Allen, Auglaize, Mercer and VanWert Counties.——Dr. John C. George, first assistant physician at Dayton State Hospital, has resigned and will practice in Lima.——Dr. David Gillard, Port Clinton, has resigned as local surgeon for the Lake Shore System, and has been succeeded by Dr. Howard M. Montgomery.——The office of Dr. Ezra Burnett, Delphos, was damaged by water in a fire, December 2.——Dr. John J. Thomas has been appointed a member of the health board of Cleveland, vice Dr. Edward F. Cushing, resigned.——Dr. Ira E. Seward has succeeded Dr. Henry Baldwin as health officer of Springfield.

Ill and Injured.—Dr. Clifford T. Okey, Columbus, is seriously ill in Mount Carmel Hospital with pneumonia.——Dr. David M. Smith, Newark, slipped on an icy pavement, December 3, breaking his right leg above the knee.——Dr. John W. Alexander is reported to be seriously ill at his home in Newark. ——Dr. Renwick H. Montgomery, Youngstown, is reported to be critically ill as the result of cerebral hemorrhage.——Dr. P. Letherman, Outville, sustained severe cuts on the head in a collision between his buggy and another carriage at Pataskala, December 3.——Dr. August Schumacher, Hamilton, who has been seriously ill with ptomain poisoning, is reported to be convalescent.——Dr. Elmer C. Radenbaugh, West Salem, who underwent operation in Wooster City Hospital a few weeks ago, has recovered and resumed practice.——Dr. Upton M. Carnes, Canton, is said to have been adjudged insane and ordered to be committed to the Massillon State Hospital.

The Oxford Liquor Case.—Dr. Hugh M. Moore, banker and druggist of Oxford, charged by the president of Miami University with having sold the liquor which figured in a Thanksgiving poker party given by students, is said to have been found guilty in the mayor's court, and fined $50 and costs. The court found no fault with the defendant for having a prescription for liquor nor for having it filled in the store in which he was part owner. The court held that the violation of the law was in the defendant having filled the prescription when he was not a druggist or pharmacist within the meaning of the code, which gives the following definition: "one who has practiced pharmacy for a period of four years, or has received an equivalent training, or has been examined by the State Board of Pharmacy of Ohio." The defendant's testimony was to the effect that the registered pharmacist employed in the store was absent when he filled the prescription. A motion has been filed for a new trial.

Cleveland

Dance for Charity.—From a ball in the Colonial Club, St. Vincent's Charity Hospital, Cleveland, received over $5,000.

Endowment for Medical Library.—By the will of the late Dr. Rosenwasser, a bequest of $10,000 was left to the Cleveland Medical Library. The proceeds are to be used in purchasing medical books and periodicals. Dr. Rosenwasser also left his library for the use of the association.

Agreement Regarding Milk.—Because farmers who have had milk refused by one city have been accustomed to ship it to another city, the departments of health of Cleveland, Cincinnati, Pittsburg, Columbus, Youngstown, Lorain and Akron, cities which draw their milk from the same territory, have agreed that no milk or cream refused by any city represented, because of faulty conditions at the dairy or any violation of the conditions imposed by the codes of these cities, shall be accepted by any of the other cities represented.

Robb Memorial Services.—Memorial services were held recently for Mrs. Isabel Hampton Robb. The plan announced was to provide a memorial hall to serve as headquarters of the various organizations for trained nurses of the city, containing an auditorium, library, offices, restaurant and living accommodation. Dr. Charles F. Hoover announced that the $6,000 already subscribed will be used as a fund for lectures to be delivered before nurses by medical men, and for popular lectures on hygiene for mothers and children. Dr. William H. Welch, Baltimore, paid a glowing tribute to the memory of Mrs. Robb, who he said, probably did more than any other one person in reforming and organizing the profession of trained nurse.

Cincinnati

Honan in Cincinnati.—Dr. J. H. Honan, Bad Nauheim, Germany, formerly president of the Anglo-American Medical Society, Berlin, addressed the Cincinnati Academy of Medicine recently on "Weak Heart, Its Causes and Treatment."

Personal.—Dr. E. Otis Smith has been appointed cystoscopist and Dr. O. V. Huffman, curator to the Cincinnati Hospital.——Dr. Edward A. Fox, for many years staff physician of the Hamilton County Infirmary, has resigned.

Department of Health Reorganized.—The Cincinnati Department of Health has reorganized under seven subdepartments, to be known as those of the board of health, health officers, medical inspection and relief, schools, infectious diseases, outdoor relief and tuberculosis. At the head of each of the last five divisions will be an officer who will devote his entire time to the work.

Elections.—The Cincinnati Society for Medical Research, at its annual meeting, December 1, elected the following officers: president, Dr. William Wherry; vice-president, Dr. Simon P. Kramer; secretary-treasurer, Dr. Jacob L. Tuechter, and executive committee, Drs. Paul G. Woolley and Irving Fisher. ——At the annual election of the Cincinnati Polyclinic and Postgraduate School the following officers were elected: president, Dr. Charles T. Souther; vice-president, Dr. Adolf F. Morgenstern; secretary-treasurer, Dr. Oscar W. Stark, and director of clinics, Dr. Albert E. Hussey.

PENNSYLVANIA

Medical Club Election.—At the annual meeting of the Oil City Medical Club, held December 1, the following officers were elected: president, Dr. John L. Hadley; vice-president, Dr. Winnie K. Mount; secretary, Dr. Sylvester W. Sellew, and treasurer, Dr. Frank B. Jackson.

Personal.—Dr. Edward Martin, the newly elected professor of surgery at the University of Pennsylvania, represented that institution at the annual banquet of the Colorado alumni at Denver on December 17 and at the banquet of the Pacific Southwest alumni at Los Angeles December 22.——Dr. Thomas Veiel, of Stuttgart, Germany, and Dr. William F. Blake, of San Francisco, have been visitors to Philadelphia during the present week.

Annex for Tuberculosis Hospital.—The College Club of Pittsburg, on November 30, held a meeting in support of the project of establishing a tuberculosis annex of the Woman's Hospital for tuberculosis patients. The proposed annex will provide five rooms for private patients, two of which are to be at the disposal of the College Club. The cost of the new annex is estimated at $5,000. Donations and pledges amounting to $1,200 have already been received.

Fine for Munyon.—December 16, the Munyon Homeopathic Home Remedy Company is said to have paid a fine of $600 imposed by Judge McPherson in the U. S. District Court, for misbranding certain "specifics." Special agent Jenkins of the government food and drug bureau, Dr. Rudderman, of Nashville, Tenn., a government analytical chemist, and other government officials analyzed Munyon's Asthma Cure, Munyon's Blood Cure, the Munyon's Special Liquid Blood Cure, etc., the latter claiming to cure any number of blood affections. Dr. Edward M. Gramm, a homeopath, testified that the remedies contained nothing that would effect a cure of the ills advertised on the labels.

Philadelphia

Officers Elected.—The annual meeting of the Philadelphia Medical Examiners' Association was held and the following officers were elected: president, Dr. A. T. Gaillard; vice-president, Dr. Francis S. Ferris; secretary, Dr. Joseph D. Farrar, and treasurer, Dr. George D. Morton.——At a meeting of the West Philadelphia Medical Association, held December 5, the following officers were elected for 1911: president, Dr. Hiram L. Lutz; vice-president, Dr. Charles P. Pike; corresponding secretary, Dr. Harry G. Hudson; financial secretary, Dr. William Miller, and treasurer, Dr. Edmund L. Graf.——At the quarterly meeting of the Physicians' Motor Club of Philadelphia, on November 22, the following officers were elected: president, Dr. Sigmund L. Gans; vice-presidents, Drs. L. Webster Fox, S. Solis Cohen, and Edward E. Montgomery; secretary, Dr. Sylvester J. Deehan, and treasurer, Dr. James G. Taylor.

SOUTH CAROLINA

Personal.—Dr. William J. Burdell, Lugoff, has been made medical secretary of the Southern Division of the Esperanto Association of North America.——Dr. Jesse F. Cleveland, Spartanburg, was seriously injured in a collision between a carriage and a passenger train, recently.

Statue for Marion Sims.—The State Medical Society has started a movement to erect on the State House grounds, Columbia, a statue of Dr. J. Marion Sims. The proposed monument is to cost $10,000, of which the medical society will furnish $2,500, and the legislature will be asked to contribute $5,000.

TENNESSEE

Personal.—Dr. John B. S. Woolford, Chattanooga, has returned from abroad.——Dr. Henry L. Williford, Memphis, while being held up by a negro highwayman, November 23, killed the robber by cutting his throat.——Rev. William Kelly, Nashville, for the past ten years a medical missionary in China, is visiting his home.

Prevention of Blindness.—The exhibit for the prevention of blindness from the Russell Sage Foundation has been

shown in Memphis, Jackson, Humboldt, Nashville and Chattanooga. It was secured through Dr. Elizabeth C. Kane, Memphis, chairman of the Health Department of the Tennessee Federation of Women's Clubs.

TEXAS

Personal.—Dr. William M. Brumby, Austin, has resigned as state health officer and president of the State Board of Health to become medical director of the Equitable Life Insurance Company of Texas, San Antonio.——Dr. Ralph Steiner, Austin, has been offered the position of state health officer vacated by the resignation of Dr. William M. Brumby.——Dr. Charles P. Brewer, Fort Worth, narrowly escaped death in a fire which did about $8,000 damage to his property in Fort Worth recently.——Dr. C. C. Green has succeeded Dr. Frank R. Ross as assistant health officer of Houston.——Dr. E. E. Best, Cameron, has been appointed health officer of Milam county.——Dr. W. S. Winter, Jr., has been appointed assistant post surgeon of Port Arthur.

GENERAL NEWS

Examination for Anatomists.—The United States Civil Service Commission announces examinations Jan. 18, 1911, at various places throughout the United States to secure eligibles from which to make certification to fill a vacancy in the position of male anatomist at $1,600 per annum in the Army, medical museum, office of the surgeon general, and vacancies requiring similar qualifications as they may occur. Application should be made either to the United States Civil Service Commission, Washington, D. C., or to any local board of examiners.

Report of the Surgeon-General of the Navy.—The annual report of the Surgeon-General of the United States Navy, Chief of the Bureau of Medicine and Surgery, to the Secretary of the Navy for the fiscal year of 1910, shows a generally diminished damage ratio from disease, injuries, invalidings, and deaths as compared with the previous year and the average of the previous decade. The death rate of 5 per 1,000 is lower than has been previously recorded. The total admission ratio dropped from 725.36 to 698.25; the ratio of daily average of patients from 29.10 to 28.52; the average number of sick days for each individual from 10.56 to 10.41, and the ratio of total discharges from disability from 35.49 to 30.59. The total damage from disease alone in percentage of sick was 3.952, which is lower than for any year since 1898. These results are attributed to the increasingly recognized functions of the medical department to prevent the occurrence of disability rather than to await its inception to effect a cure. The establishment of a naval medical reserve corps is recommended to act as a recruiting body for the regular establishment. The prominent hygienic problems of the service are stated to be contagious and venereal diseases. The proportion of contagious diseases is lower than in former years but there exists what is considered a serious situation in regard to venereal disease, there having been more than 100 primary admissions for this class of affections during the first three months of the year, with an average complement of 1881 who have recently entered the service free from such disease. He advises consistent enforcement of venereal prophylaxis at training stations the same as on board ships. The surgeon-general disapproves of the physical test by riding, and suggests as a substitute the Swedish system of training. The admission rate for pulmonary tuberculosis has declined from 6.26 to 5.60.

MANILA LETTER

MANILA, Nov. 5, 1910.

Pharmacy in the Philippines

Now that the Philippine Medical School is thoroughly established and is well under way in offering scientific instruction to its students, and the medical department of Santo Tomas University has shown signs of improvement, it has been thought well to take up the question of the Filipino pharmacist. The question of his efficiency and the local facilities for training pharmacists has been studied with a view of recommending necessary improvements in the existing courses in the three Manila schools of pharmacy, as well as looking toward the establishment of a school of pharmacy in connection with the Philippine Medical School and the University of the Philippines.

In the Philippines, pharmacy is considered one of the learned professions; the pharmacist is in rank next to the physician, and, like the latter, has too often proved ill trained for many of the simple duties of his trade. In many of the towns of the provinces he forms an important factor in the social scale and has sometimes engaged in politics.

In Manila there are good pharmacies, but with very few exceptions the provinces are without efficient or competent pharmacists. The training in the local schools of pharmacy is based on the Spanish system and is not in accord with the modern European methods. Thus we are facing the necessity of having the prescriptions of American and American-trained physicians sent to Manila to be filled. These prescriptions are sometimes written by Manila physicians, sent to the provinces and then returned to Manila to be filled. This state of affairs almost compels the graduates of the Philippine Medical School to be their own pharmacists in the provinces. Such a condition hampers the work of the bureau of health and will defeat many of the efforts of modern medical education in the Islands until improvement is brought about.

With the possible exception of one school—the school of pharmacy of Santo Tomas University—the institutions in Manila are in nowise prepared to train competent pharmacists. Even the graduates of the Santo Tomas school have great difficulty in passing the examinations of the board of pharmaceutical examiners, and radical changes must be made in this school to make it an efficient institution.

In July, 1909, twenty-three candidates entered the examinations of the board of pharmaceutical examiners. Only one passed. At the 1910 examination, twenty-six candidates were entered; not a single candidate passed. The highest grade given was 53 per cent.

The legal requirements are not to be considered drastic. They were made to suit the conditions of the country and are just as liberal as is compatible with public safety in the matter of fairly well-trained pharmacists. Any student who has had a moderately good training in pharmacy should have no trouble in passing the examinations.

If the educational facilities for training pharmacists are not soon improved it will probably be necessary to relax the legal requirements somewhat, otherwise the drug business will be monopolized by a small number of pharmacists. The Filipino is quick to take advantage and is decidedly mercenary when he controls the situation. For this reason it is not advisable to enforce rigidly the regulations covering the practice of midwifery in these islands. It was found in Manila that the few competent midwives would quickly run up their charges to exorbitant rates when the ban was put on their less capable sisters in the profession. The Filipino pharmacist, as well as the Filipino physician, usually regulates his charges by the necessity for his services in a particular case. In an emergency he is often a robber. As an example: one of the medical health officers had occasion to require immediately 2 liters of saline solution in an emergency case. He dispatched a messenger to the local *botica* (drug store) on a hurry-up call for the saline. The bill presented for the 2 liters was 16 pesos ($8.00).

LONDON LETTER

(*From Our Regular Correspondent*)

LONDON, Dec. 3, 1910.

The Health of Children

The report for 1909 of the chief medical officer of the Board of Education, Dr. George Meredith, is a most important document. It covers the first complete year during which the children entering and leaving the public elementary schools of England and Wales have been subjected to systematic medical examination. It brings together a mass of new and authentic data on the physical condition of the rising generation and has an important bearing on the question of national degeneration, about which so much has been written and so little proved in recent years. The children attending the schools in all number 6,000,000. This comprised the whole of the children of the working class and a large part of the children of the middle class, the remaining children being sent to private schools. About 10 per cent. suffer from serious defects in vision, from 3 to 5 per cent. from defective hearing, 1 to 3 per cent. have suppurating ears, 8 per cent. have adenoids or enlarged tonsils of sufficient degree to obstruct the nose or throat and to require surgical treatment, 20 to 40 per cent. suffer from extensive decay of the teeth, 40 per cent have unclean heads, 1 per cent. suffer from ringworm, 1 per cent. from tuberculosis of a readily recognizable

form, and 0.5 to 2 per cent. from heart disease. In cases in which disease is discovered measures are taken for its treatment. The fact is brought to the notice of the parents, the parents are assisted in the application of remedial measures and in case of persistent neglect are punished. Notwithstanding the prevalence and serious character of dental disease there is good hope of considerable success in dealing with it, for it seems to be largely due to total neglect of cleanliness of the mouth in childhood, and the necessity for such cleanliness is being more and more impressed on both children and parents by teachers, nurses and health officers. Dental clinics are being established, at which early conservative treatment is begun. The report marks an epoch in the history of education in this country and gives official recognition to the fact, long ignored, that before educating children their physical fitness must be insured.

New Theory as to the Spread of Sleeping-Sickness

Evidence is being brought forward that sleeping-sickness is spread by another fly than the *Glossina palpalis*. The latest fact on this point comes from northwestern Rrodesia, particularly from a valley in which a tributary of the Zambesi flows, where a number of cases of sleeping-sickness have occurred among both whites and natives. In this district no *Glossina palpalis* has been found, and the nearest point at which the fly lives is 400 miles distant. Up to the present all preventive measures taken by the various governments have been in regard to this fly, whose location has been clearly defined. An elaborate map of Africa has been prepared in which the various *Glossina palpalis* areas have been specially colored, and wherever possible, the belt infected by this creature has been cleared and the inhabitants removed to a healthy zone. But if this new theory be adopted future measures will have to be more extensive. The newly suspected fly is another species of tsetse fly, known as the *Glossina morsitans*, which is found in regions much further south than the *Glossina palpalis*, where the latter is unknown.

Florence Nightingale's Will

Miss Florence Nightingale's remarkable character is shown by the directions which she gave as to the disposal of her body. She willed her body to medical science for dissection and requested that, if possible, no memorial, or one of the simplest character, should mark the place of burial; also that the burial services should be extremely simple.

An Actuarial Study of the Influence of Sanatoriums on Pulmonary Tuberculosis

Two actuaries, Mr. W. P. Elderton and Mr. S. J. Perry, have made an important investigation, which even in the voluminous literature of tuberculosis is absolutely new. They have made an actuarial study of the influence of sanatoriums on the expectation of life of the subjects of tuberculosis. The material used was collected by Dr. Noel Bardswell in this country and by Drs. Lawrason Brown and Pope in America. The figures are analyzed and the expectation of life is compared with that given in the Registrar-General's English life-table. It is found that even in cases of tuberculosis in which the treatment has been most successful the expectation of life is much shortened. A comparison is also made between the results obtained before the introduction of the sanatorium treatment and those obtained since it has been adopted. Difficulties were found in making this comparison, but the surprising conclusion is reached that the figures show no superiority in the results of sanatorium treatment. The authors freely admit that their results require confirmation in the light of fuller statistics. Even so, their importance is obvious.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 2, 1910.

Prizes of the Academy of Sciences

The Académie des sciences has awarded three Montyon prizes in medicine and surgery, each of $500 (2,500 francs); one to Drs. G. Martin, Leboeuf and Roubaud for their work, "Report of the Commission on the Study of Sleeping-Sickness in the French Congo, 1906-08;" the second to Prof. J. Dejerine and Dr. André Thomas of Paris, for their work on diseases of the spinal cord; the third to Dr. E. Perroncito, professor in the Turin medical college, for his work on the diseases of the miners from the St. Gothard to the Simplon. Three prizes of $300 (1,500 francs) have been awarded: the first to Dr. C. Mantoux of Cannes, for his work on the intradermal reaction to tuberculin; the second to Dr. P. Emile Weil of Paris, for his work on hemophilia; the third to Dr. G. Moussu, professor of the veterinary school at Alfort and to M. Monvoisin, for their works on the milk of tuberculous cows. The Barbier prize, $400 (2,000 francs), has been divided between Dr. A. Thiroux, physician to the colonial troops and director of the bacteriologic laboratory of St. Louis, Senegal, for his work on sleeping-sickness and the animal trypanosomiases in Senegal, and M. H. Bierry of the laboratory of experimental physiology of the Sorbonne, for all of his works. The Bréant prize, $20,000 (100,000 francs), intended to reward the discoverer of a cure for Asiatic cholera, has of course not been awarded. Out of the interest of this sum, a prize of $700 (3,500 francs) has been awarded to Dr. Jules Bordet, director of the Pasteur Institute of Brabant, for his "Chemical Theories of Immunity" and "Study of the Serum of Vaccinated Animals, Toxins and Antitoxins," and a prize of $300 (1,500 francs) to Dr. A. Taurelli Salimbeni, head of the laboratory at the Pasteur Institute of Paris, for his work on cholera and the vibrios. The Godard prize, $200 (1,000 francs), has been awarded to Drs. L. Ambard and E. Papin of Paris, for their "Study of Urinary Concentrations." The Dusgate prize, $500 (2,500 francs), has been awarded to Dr. Séverin Icard of Marseilles, for his memoir entitled "Report of Deaths in Hospitals in France and Abroad; Utility of Early Necropsy and Necessity for an Early Diagnosis of Real Death, Permitting Early Necropsy." The Bellion prize, $280 (1,400 francs), has been shared between Dr. Imbeaux, chief engineer of bridges and roads at Nancy, for his "Statistical and Descriptive Annual Report of the Distribution of Water," and M. Frois, labor inspector, and M. Sartory, secretary of the Commission of Industrial Hygiene, for their memoir entitled: "Lyes and Organic Powders in Industry." The prize of Baron Larrey, $150 (750 francs), has been divided between Dr. Chavigny, *agrégé* professor at the school of military medicine at Val-de-Grâce, for his work on military psychiatry, and Dr. Miramond de La Roquette, military physician at Nancy, for his work on the scapular girdle. The Mège prize, $2,000 (10,000 francs), has not been awarded. A prize from the interest has been awarded to Mlle. J. Joteyko, of the laboratory of psychophysiology at the University of Brussels, and Mlle. Stefanowska, for their work on muscular function and the psychophysiology of pain.

In physiology the Montyon prize of experimental physiology, $150 (750 francs), has been divided between Prof. C. Livon of Marseilles, for his works on experimental physiology, and M. Marin Molliard, for his "Organic Nutrition of the Higher Vegetables." The Philipeaux prize, $180 (900 francs), has been awarded to Dr. Maurice Arthus, professor of physiology at the University of Lausanne, for his "Sero-Anaphylaxis of the Rabbit." The Lallemand prize, $360 (1,800 francs), has been divided between M. René Legendre, for his "Nerve Cellule of *Helix Pomatia*," and M. Aldo Perroncito, for his "Cellular Elements in the Process of Degeneration of the Nerves." The Martin-Damourette prize, $280 (1,400 francs), for a work on therapeutic physiology, has been awarded to Dr. E. Laguesse, professor of histology at the Lille medical school, for his work on the pancreas.

Juvenile Crime

In a report to the General Council of the Department of the Seine, M. Ambroise Rendu published suggestive statistics among minors. Out of every 1,000 crimes against persons, four are committed by minors under 16 years, and 164 by minors aged from 16 to 20. Out of every 1,000 crimes against property, two are committed by minors under 16, and 178 by minors aged from 16 to 20. In 1905, 3,805 boys and 566 girls under 16 were before the courts; in 1909, there were 4,517 boys and 703 girls. Believing that it is time to combat this proportion of crime among minors, M. Ambroise Rendu has invited the general council to pass the following resolutions: (1) that minors arrested for any offense should be transported in special conveyances without contact with other arrested persons; (2) that minors' cases should be tried before a special magistrate; (3) that such cases should be tried in *chambre de conseil*, that is, not publicly, but with the aid of a representative of a society for the protection of children.

Contamination of Oysters

While the oyster is believed to possess the power of selecting its food by repelling unsuitable material, the water which it respires penetrates quite freely, unfiltered, and with all its impurities. If this be true, the danger from infection from

contaminated oysters would arise much less from the contents of the digestive tube than from the liquid which bathes the respiratory organs and remains in the shells until the oysters are eaten. From a communication made in one of the last sessions of the Académie des sciences by M. Fabre-Domergue, it appears, however, that oysters are capable, in an impure medium, of ingesting a massive dose of detritus of stercoral origin, which may contain germs of infectious intestinal diseases. More importance, then, should be attached to the bacteriologic analysis of the oysters themselves, their intestinal contents and their liquor—too much neglected up to the present in France—than to the water of the beds, the degree of infection of which varies, moreover, in large degree from one time to another.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 1, 1910.

Personal

Professor Erb celebrated his seventieth birthday November 30. This distinguished clinician, who still enjoys remarkable physical and mental activity, resigned his teaching position some years ago.

Professor La Valette St. George, professor of anatomy at Bonn, died November 30 at the age of 79. He was a pupil of Kölliker and John Müller, joined the Bonn faculty in 1858, became regular professor in 1865 and head of the anatomic department in Bonn in 1875. His most important work was in the field of comparative anatomy, especially the history of evolution. In 1907 he resigned his professorship.

Professor Eberth, director of the pathologic institute at Halle, will resign his position at the end of the winter semester, on account of his advanced age.

Privat-docent Dr. Heineke has been appointed director of the university surgical policlinic at Leipsic.

Law Against Quackery and Nostrums

The principal feature of the proposed law, the bill for which, as I have mentioned, has been recently placed before the Reichstag by the government, is to compel the quacks to announce themselves to the authorities and to subject themselves to control by which they are required to keep business records in which a report is made of their business transactions. The following are to be forbidden by the law: any treatment that is not founded on personal investigation, such as treatment by mail, etc., treatment by mystic processes, especially faith healing; the treatment of diseases dangerous to the community, which are included under the imperial infectious-diseases act, that is, cholera, plague, leprosy, typhus, small-pox and yellow fever; treatment of all diseases or injuries of the sexual organs, especially venereal diseases, the latter even when they affect other parts of the body; the treatment of cancer; treatment by hypnosis; the treatment by the use of narcotics which may extend beyond the part treated, and treatment by hypodermic or intravenous injection. The imperial upper house (*Bundesrat*) can prohibit the treatment of other diseases. Furthermore, quacks are not to be permitted to administer medicines themselves nor shall they refer their customers to special sources as to supply. The trade of the quack is to be forbidden if the facts justify the assumption that by the pursuit of his trade the life of a human being or animal is endangered or health injured or that the customers are being swindled. Further, their occupation can be forbidden if they are convicted of a punishable transaction in the course of their business or if their civil rights are forfeited in any other misdemeanor. Against fraudulent secret remedies, it is provided that any one shall be punished with imprisonment up to one year and with a fine up to $250 (1,000 marks), who shall in public advertisements which concern the prevention, mitigation or cure of disease in man or animals or tonic remedies for man or animals or infant food, make statements which are not scientifically true and are calculated to deceive the public. If the transaction is only negligent, the imprisonment shall be limited to only three months and the fine to $150 (600 marks). It may also be provided that the verdict shall be published at the cost of the convicted. I will report on the other details when the law has been passed. It is at least to be hoped that it will be passed, although in the discussion so far, objections against a number of the provisions have been raised by all of the speakers. The bill is next to be submitted to a committee of the delegates for consideration.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 1, 1910.

Warning Against Certain Scholarships for Medical Students

The scarcity of practitioners in the country has had unpleasant results, and several efforts have been made to induce good men to undertake country practice. But as the people are not very rich and the appointments are not too well paid, the country magistrates have always had difficulty in obtaining adequate medical help. The party now in power has besides made it a special point to appoint only doctors who fulfil certain national and religious requirements rather than those of scientific education. The existence and development of a powerful medical organization, which soon began to pay special attention to the country appointments, still further embarrassed the ruling party by boycotting all appointments below a certain sum. In order to counteract the effect of these and similar measures, a number of scholarships valued each at from 600 to 1,000 kronen ($120 to $200) a year, have been offered to medical students from their third university year, under the condition that these men will pledge themselves to enter the services of the country magistrates after having completed their study. They would, of course, be sent where the low payment deters regular doctors from settling, and they would have to obey, being under a contract. A warning has been issued by the medical organization, explaining matters to the medical students, and showing how such a contract, being agreed on for at least ten years, would mean actual sweating and ruin for the young doctor. Hitherto the plan of scholarships has not been very successful.

Centralization of Public Charity

For several months efforts have been made to bring about a complete change of the mode of administration of public charitable institutes, including hospitals in Lower Austria (Vienna Letter, THE JOURNAL, Feb. 5, 1910, p. 479). The pretext is the unsatisfactory financial condition of the phantom Vienna "hospital fund," which was long since exhausted in reality, but which preserves a fictitious existence and still keeps the hospitals running by means of loans. The fund is in the hands of the government of Lower Austria, and its yearly deficit amounts at present to some 1,500,000 kronen. As the legal responsibility for the expenses of the hospitals is not fixed on the general government, the municipality or the diet, the latter has offered to take this matter into its own hands under the condition that besides a loan of 10,000,000 a tax of 5 per cent. on all rates be granted for this purpose. This appears not impossible, but the other conditions have quite a different bearing. The diet intends to form a corporation of thirty-two men, in which only two representatives of medical men will sit, the remainder being elected or appointed by the general government, the diet and the city of Vienna. The latter two authorities belong to the well-known reactionary and antimedical party at present in power. The above-mentioned managers are to be given the supreme control over all hospital directors both in Vienna and in the country, and even over the clinics. The appointment of hospital directors as well as of members of the hospital staff is to be in their hands. They will be bound nominally to elect a candidate out of three men nominated by the hospital staff, but this of course does not preclude other possibilities. It is also intended to make the appointments of hospital doctors permanent, for life, the service to occupy a man's whole time, so that a large number of graduates from the university would be excluded from practical learning. Such plans interfere seriously with the future of the medical profession in this country, as it is well known that nepotism and friendship have a great deal to do with this political party.

As soon as the outlines of this plan became known in medical circles, much indignation and opposition were aroused. A protest meeting, in which all hospital directors as well as university professors were present or were represented, took place a short time ago, and an urgent appeal was directed to the government to call its attention to the danger threatening the population. On the other hand, the proposed tax of 5 per cent. on all taxes means a heavy addition to the heavy burden now weighing on the rate-payers. Large sums of money are involved, as the hospitals coming under the scope of the plan have over 16,000 beds. The resistance offered by a large section of the population will perhaps be successful in warding off this attack.

Pharmacology

"PROFESSOR" SAMUELS AND HIS EYE WATER

One of the latest comets to flash across the firmament of quackery is "Professor" H. Samuels, who hails from Wichita, Kansas. Samuels claims that he is "the only living person" who "treats through the eye" the following diseases:

Consumption	Paralysis	Bright's Disease
Fits	Blindness	Morphin Habit
Cataracts	Eczema	Heart Trouble

These are but a tithe of the numerous ailments that this new apostle of quackery offers to "cure." Samuels has been lavishly spending his easily made money in advertising space. One-third of a city daily's page is no unusual amount of space for him to use for a single advertisement.

The business is conducted along the lines of the typical mail-order fake. A series of "follow-up" circular letters so printed as to simulate individual type-written letters, "symptom blanks," the inevitable and ubiquitous testimonial—these and such other paraphernalia as go to make up the stock-in-trade of the quack, are used by Samuels in his process of swindling the sick and humbugging the helpless. He emphasizes two points in all his advertising claptrap. First he wishes to treat only "hard cases, cases that the regular doctor can do nothing for;" second, he wants it generally known that he has been arrested many times for irregular practice.

Samuels' "remedy" consists of an "eye water" which is claimed to have cured ovarian tumor, "paralysis of the optic nerve," deafness, tuberculosis and various other ills. Two specimens of the "eye water" alleged to be used by Samuels have been sent in by correspondents, from whom we learn that $25.00 an ounce is charged for the stuff. A cursory examination of both samples has been made in the Association laboratory and our chemists report as follows:

"Each of the two samples of the solution alleged to be used by Professor Samuels was a colorless, slightly turbid liquid having a salty taste. Each gave tests for sodium, chlorid, sugar and a trace of sulphate. In neither were metals such as arsenic, copper, lead, iron, etc., present and in neither could any potent alkaloids be detected.

"One of the samples examined was too small to make a quantitative test practicable. Examination of the larger sample showed that the sodium chlorid and sugar were each present in about the same quantity, viz., 7.5 grams in 100 c.c. (about 35 grains to the fluid ounce).

"The following formula gives a solution which is practically identical with the larger sample examined:

Table salt	10 ounces
Sugar	10 ounces
Hydrant water	1 gallon

"Approximate value 6 cents a gallon; alleged selling price $25.00 an ounce."

"Boston American"

OCTOBER 1, 1910.

PROF. SAMUELS ORIGINATES PECULIAR METHOD OF TREATMENT

HIS PHENOMENAL SUCCESS CAUSES ENMITY OF DOCTORS

ARRESTED MANY TIMES

Photographic reproduction (greatly reduced) of a two-column advertisement of "Professor" Samuels.—From the *Boston American*.

The absurdity of attempting to cure consumption, the morphin habit, ovarian tumor and scores of other pathologic conditions, by merely dropping a weak solution of salt and sugar in the eye, would seem sufficiently apparent to render quackery of that sort unprofitable. So it would be, were it not for the credulity and unfailing optimism of the chronically ill toward all new "treatments." Samuels' reasons for wanting to "treat" chronic diseases are evident. The quack who attempted to relieve a man's toothache or headache by dropping a little salt water in his eye and charging $25.00 for the process, would find few victims. But with sufferers from chronic diseases the case is different. Ninety-nine consumptives out of a hundred will, for the first few weeks, agree that they have been benefited after having experimented with some new "treatment." And the less scientific the treatment and the more wildly improbable the claims made for it, the greater will be the alleged benefit derived from it.

To devote more space to this humbug would be to dignify it. Suffice it to say the whole business is founded on falsehood and fraud. Any man who will take money from a consumptive, an epileptic or a morphin habitué under pretense of curing his disease with such an inert mixture as that just described is an unconscionable scoundrel.

It is a sorry commentary on our civilization that the incurably ill cannot, apparently, be protected against their own credulity and the wiles of those who would fatten on their misfortune and profit by their sufferings.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

MAGNESIUM PEROXID

W. A. Puckner and W. S. Hilpert

A number of peroxids such as zinc peroxid, magnesium peroxid and sodium peroxid have been offered to the profession as substitutes for the hydrogen peroxid solution of the Pharmacopeia and have received considerable attention of late. They are claimed to possess the oxygen-producing properties of the Aqua Hydrogenii Dioxidi, modified by the relative stability of the compounds and the metallic salts which are produced in their decomposition. The commercial products are usually mixtures containing but a limited amount of real peroxid; for example, commercial "magnesium peroxid" contains but about 15 per cent. of magnesium peroxid while commercial "sodium peroxid" contains about 75 per cent. of sodium peroxid.

The different peroxids vary considerably in their stability, their solubility and their ease of decomposition in solution. In solutions of acids the peroxids are decomposed, forming hydrogen peroxid and the salt of the metallic radicle of the peroxid. In this way the entire active oxygen-content of the peroxid is quickly made available in the form of hydrogen peroxid in solution. Water dissolves only minute quantities of these peroxids but it does decompose them with varying degrees of readiness. Thus zinc peroxid, although very insoluble, is decomposed by water into zinc hydroxid and hydrogen peroxid as follows:

$$ZnO_2 + 2H_2O \rightarrow Zn(OH)_2 + H_2O_2$$

ALKALINITY FAVORS DECOMPOSITION

It is well known that hydrogen peroxid is supposed to decompose with the formation of water and oxygen ($H_2O_2 \rightarrow H_2O + O$). The decomposition of hydrogen peroxid in this manner is retarded, or takes place only to a slight extent, in the presence of acid, as is illustrated by the use of acids to preserve the commercial hydrogen peroxid solutions. On the other hand alkali favors the decomposition of hydrogen peroxid to water and oxygen and the rapidity with which hydrogen peroxid is decomposed is in direct proportion to the amount or strength of the alkali.

When sodium peroxid is decomposed by water a very strong alkali, sodium hydroxid (caustic soda), is formed and therefore the ready decomposition of the hydrogen peroxid is favored and hence the sodium peroxid has strong oxidizing

powers. Magnesium peroxid in contact with water also forms an alkaline body, magnesium hydroxid, but which is a much weaker alkali than sodium hydroxid and correspondingly less active in decomposing the hydrogen peroxid present; for this reason magnesium peroxid is not so powerful an oxidizing agent as sodium peroxid. Zinc peroxid forms the weakest alkaline solution of all and is the least powerful oxidizer of the peroxids under consideration.

From this it appears that the energy of the oxidizing powers of different peroxids varies in direct ratio to the alkalinity of the solution produced in their decomposition. The variation in the alkalinity of the solutions formed, affects the therapeutic uses of the peroxid. Sodium peroxid is not desirable for therapeutic use because of the formation of the strongly alkaline solution of sodium hydroxid (caustic soda). Magnesium and zinc peroxids, on the other hand, yield weakly alkaline solutions and are for that reason more desirable.

ADVANTAGES CLAIMED

The advantages claimed for the peroxids of sodium, magnesium and zinc are that they can be used for the extemporaneous preparation of an oxidizing solution and that zinc and magnesium peroxids in contact with the moist surface of a wound or mucous membrane slowly liberate oxygen, *in situ*, at the point where it is most needed.

The claims regarding the value of these peroxids made by the manufacturers of these products, however, are not confined to such statements as the above, but are much more extravagant, wonderful properties being ascribed to the preparations.

A firm, which specializes in the manufacture of peroxids and which has advocated their promiscuous introduction in toilet preparations for the cleansing, bleaching and beautifying of the feet, teeth, face, hands, and nails and for the "rejuvenation of the skin," has made the following statements in advertising pamphlets:

> "Biologically, magnesium peroxid may be found to be a useful factor in cell formation, inasmuch as oxygen is essential for the growth of the protoplasm."

It has also been stated that it is " . . . a preventative of typhoid fever." Zinc peroxid has been claimed to be a "preventative of tetanus" and also "a skin food."

MAGNESIUM PEROXID AS FOUND ON THE MARKET

Magnesium peroxid is one of the preparations which was recommended for inclusion with the next pharmacopeia, by the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June 1909, and it is for this reason, of special interest to physicians. To determine the composition and state of purity of the available brands of commercial magnesium peroxid, their chemical examination was taken up by us in the Association laboratory.

The results of a preliminary examination of specimens of magnesium peroxid were submitted together with a tentative description to the firms whose labels appeared on the specimens. In view of the results found and of the criticism with which the descriptions met it was considered advisable to take up again the examination of magnesium peroxid, with the special object of determining the keeping quality of the product. Accordingly fresh specimens were purchased and also solicited directly from the firms marketing the product. In response to the request the Mallinckrodt Chemical Works, Powers, Weightman, Rosengarten Co., and the Roessler and Hasslacher Chemical Co. sent specimens, for which appreciation is at this time expressed. Specimens bearing the labels of these firms were purchased at the same time on the open market and were examined with the submitted specimens. At the same time samples of each of the six specimens were placed in small vials which were completely filled and tightly stoppered, and samples of the specimens purchased on the open market were placed in wide-mouth bottles with loosely-fitting stoppers and all set aside for six months, at the end of which time they were all again examined.

RESULTS OF EXAMINATION

Physically, the six specimens were practically identical, each being a light, white, tasteless and odorless powder, practically insoluble in water. Each sample was soluble in dilute acids, yielding a solution which responded to tests for peroxid, magnesium, chlorids and small quantities of sulphates, iron and calcium. The specimens also responded to tests for carbonate. In no case were heavy metals, such as lead, copper, arsenic, etc., found.

As the value of magnesium peroxid depends chiefly on its peroxid content, assays were made to determine the total available oxygen in each specimen and the results calculated to magnesium peroxid. The following table contains the magnesium peroxid content calculated from the available oxygen found both at the time the specimens were received and again six months later:

Brand[1]	Source	MgO_2 content as received	MgO_2 content 6 months later[2] *A*	*B*
R. & H.	Market	14.66	14.44	14.33
	R. & H.	25.18	18.26	.....
Mall.	Market	17.43	17.15	16.90
	Mall.	15.56	15.28	.....
P. W. R.	Market	12.17	11.20	11.50
	P. W. R.	15.45	14.63	.....

1. "R. & H." refers to the Roessler and Hasslacher Chemical Co., "Mall." refers to Mallinckrodt Chemical Works and "P. W. R." refers to Powers, Weightman, Rosengarten Co.

2. *A*—Specimens kept in vials completely filled and tightly stoppered. *B*—Specimens kept in vials partially filled and loosely stoppered.

These results show that the obtainable specimens of magnesium peroxid vary widely in their peroxid content and that the specimen containing a large amount of peroxid deteriorated rapidly on keeping; and that magnesium peroxid keeps equally well whether stored in completely filled, well stoppered bottles or in partially-filled, loosely-stoppered bottles.

THE CHLORID CONTENT

In making the qualitative test for chloride it was found that some specimens contained relatively large quantities of this impurity and accordingly the chlorid content was quantitatively determined with the following results:

Brand	Source	Chlorid (Cl) Per cent.
R. & H.	Market	6.89
	R. &. H.	0.21
Mall.	Market	1.65
	Mall.	0.16
P. W. R.	Market	Trace
	P. W. R.	2.56

The results of this examination show that while the chlorid content varies rather widely, one specimen is practically free from this impurity. It is also interesting to note that, with the exception of one brand, the specimens sent by the firms contained less chlorid than the specimens purchased on the market.

WHAT THE RESULTS SHOW

The results as a whole show that the commercial magnesium peroxids vary considerably both as to composition and stability and they also show that magnesium peroxid of an acceptable state of purity and stability can be manufactured. The above examination demonstrates the need of a standard for magnesium peroxid and accordingly a tentative minimal standard of 15 per cent. real magnesium peroxid (MgO_2) with limits for permissible amounts of impurities was submitted to the three firms whose products were examined. In reply the Mallinckrodt Chemical Works pointed out "that magnesium peroxid deteriorates quite rapidly after manufacture until it reaches about 15 per cent., at which point it remains constant and stable," a condition practically found. Regarding the same point the Roessler and Hasslacher Chemical Co. wrote: "The amount of 15 per cent. magnesium peroxid is rather low to stamp it as standard," yet a specimen bearing the label of this firm, purchased on the market, was found to contain somewhat less than this amount.

A SUGGESTED STANDARD

Considering the available data together with the results of this examination it is recommended that magnesium peroxid be required to comply with the following provisional description:

Physical Characteristics.—Magnesium peroxid is a white, tasteless, odorless and amorphous powder, practically insoluble in water, but soluble in dilute acids.

Chemical Characteristics.—If about 1 gm. magnesium peroxid be dissolved in 25 c.c. dilute nitric acid and 2 c.c. tenth-normal silver nitrate added to the solution and the resulting precipitate filtered off, the further addition of a few drops of silver nitrate solution to the filtrate should not produce a turbidity (limit of chlorids).

If about 1 gm. magnesium peroxid be exposed to the full heat of a Bunsen flame for five minutes, then dissolved in 25 c.c. dilute hydrochloric acid and the solution made up to 100 c.c., a solution will result which will conform to the following tests:

Ten c.c. of the solution saturated with hydrogen sulphid should yield no precipitate, nor become colored (limit of heavy metals).

Ten c.c. of the solution to which 10 c.c. ammonium chlorid solution and ammonium hydroxid in excess have been added, should yield not more than a turbidity on the addition of ammonium carbonate (limit of calcium).

Ten c.c. of the solution should yield not more than a turbidity on the addition of barium chlorid solution (limit of sulphates).

Ten c.c. of the solution should not immediately give a blue color on the addition of a drop of potassium ferrocyanid solution (limit of iron).

If 0.2 to 0.3 gm. magnesium peroxid, weighed into a flask, be dissolved with 20 c.c. dilute sulphuric acid, the solution diluted with 50 c.c. water, the titration of this solution with tenth-normal potassium permanganate should indicate the presence of not less than 15 per cent. magnesium peroxid, MgO_2. (1 c.c. tenth-normal potassium permanganate is equivalent to 0.00279 gm. MgO_2.)

Marriages

SIDNEY H. STREETT, M.D., Baltimore, to Miss Mae Green, at Baltimore, November 23.

FRANK L. SUTTON, M.D., to Miss Mary Russell, both of Sedalia, Mo., December 1.

JAMES FITZGIBBON, M.D., to Miss Alice Barbian, both of Racine, Wis., November 24.

HALSEY BEACH LODER, M.D., Boston, to Miss Beatrice Byers, at Indianapolis, December 17.

BJARNE RAVN, M.D., Scandinavia, Wis., to Miss Myrtle Frogner, of Iola, Wis., December 1.

HOWELL SHOENER ZULICK, M.D., to Miss Marguerite Patton, both of Philadelphia, December 7.

CLAUDE WATSON, M.D., Nebraska City, Neb., to Mrs. Sarah Wodehouse of Lincoln, December 7.

CHARLES J. OVERMAN, M.D., Marion, Ind., to Miss Anna Mary Johnson of Urbana, O., December 14.

WILLIAM BARNETT OWEN, M.D., Louisville, to Miss Emily Vance of Lexington, Ky., December 8.

MOSES LANE STRATHERN, M.D., Faribault, Minn., to Miss Anna Ellis of Ishpeming, Mich., recently.

JOSEPH LOUIS RANSOHOFF, M.D., Cincinnati, to Miss Doris Kaufman of Paris, France, December 11.

ARTHUR CLYDE THORPE, M.D., to Miss Florence Chase, both of Los Angeles, at Lankershim, Cal., November 30.

WILLIAM CAMPBELL POSEY, M.D., Philadelphia, to Miss Haddassah Hamilton Felton of Chicago, December 14.

IRA CARLETON CHASE, M.D., Fort Worth, Tex., to Miss Helene Irene Keatinge of New York City, December 15.

DAVID B. KNOX, M.D., Georgetown, Ky., to Miss Susan Parrish Phelps, of Richmond, Ky., at Lexington, December 8.

Deaths

Henry Hutchinson, M.D. Hahnemann Medical College, Philadelphia, 1874; of St. Paul; a member of the State Board of Health since 1894, and for the last nine years its president; a member of the staff of the St. Paul City and County Hospital, St. Luke and St. Joseph's hospitals; a member of the American Public Health Association and Minnesota State Sanitary Association; professor of theory and practice of medicine in the College of Homeopathic Medicine and Surgery of the University of Minnesota; died suddenly in a hotel in Mustapha Superior, Algiers, North Africa, December 1, from heart disease, aged 61.

Alpheus Albert Deering, M.D. Medical School of Maine, Brunswick, 1868; a member of the American Medical Association; once secretary of the Iowa State Medical Society, and for twenty years secretary of the Central District Medical Association; district surgeon of the Chicago and Northwestern Railway Company at Boone, Iowa; formerly postmaster of Boone, a director of the Ericson Library and the Eleanor Moore Hospital; died in the latter institution, December 3, after an operation for disease of the kidneys, aged 65.

Clarke Gapen, M.D. Northwestern University Medical School, Chicago, 1875; a member of the American Medical Association; formerly professor of medical jurisprudence in the Wisconsin State University and College of Physicians and Surgeons, Chicago; for three years superintendent of the Kankakee State Hospital; formerly commissioner of health of Omaha; died at his home in Madison, Wis., December 17, from disease of the heart and kidneys, aged 60.

Ole Tollefson Hoftoe, M.D. Rush Medical College, 1885; a member of the American Medical Association; for several years local surgeon of the Chicago, Milwaukee and St. Paul Railway Company, at Lanesboro, Minn.; and afterward a practitioner of Abercrombie, N. Dak., for ten years, and for three years coroner of Richland county; died at his home in New London, Minn., November 13, from carcinoma of the stomach, aged 56.

Thomas M. Chaney, M.D. University of Maryland, Baltimore, 1866; a member of the American Medical Association; acting assistant surgeon in the Army from 1866 to 1867; until five years ago a practitioner of Baltimore; and since then a resident of Chaney; president of the Calvert County Medical Society; died at his home, December 6, from neurasthenia, aged 69.

George E. Goodfellow, M.D. University of Wooster, Cleveland, 1876; of Tucson, Ariz.; a member of the American Medical Association; for five years chief surgeon of the Southern Pacific Railroad lines in Mexico; a surgeon in the Spanish-American War with service in Cuba; died in the Angelus Hospital, Los Angeles, December 7, aged 54.

Thomas Robinson Little, M.D. University of Pennsylvania, Philadelphia, 1900; a member of the American Medical Association; medical director of the Southern Life and Trust Company; died at his home in Greensboro, N. C., in November, from edema of the lungs, consequent on asthma, from which he had suffered for several years, aged 36.

Thomas Coit Fanning, M.D. New York University, New York City, 1861; formerly assistant at the Walters Park (Pa.) Sanitarium; for two terms a member of the board of trustees of Tarrytown, N. Y., and afterward water commissioner; died at Stamford Hall., Stamford, Conn., November 4, from cerebral hemorrhage, aged 70.

E. Lawrence Herriott, M.D. University of Nashville, Tenn., 1860; a member of the American Medical Association; acting assistant surgeon, U. S. Army, during the Civil War; until three years ago a practitioner of Jacksonville, Ill., when he moved to San Antonio, Tex.; died at his home in that city, November 30, aged 77.

Michael F. Gallagher, M.D. Georgetown University, Washington, D. C., 1889; Bertillon identification expert in the Department of Commerce and Labor, Washington; and a member of the Microscopical Society of the District of Columbia; died at his home in Washington, November 25, from angina pectoris, aged 52.

Horace Babcock, M.D. University of Buffalo, 1851; a practitioner of Wisconsin until 1862, when he entered the United States service as surgeon of the Second Wisconsin Volunteer Infantry; after the Civil War, a resident and practitioner of Gowanda, N. Y.; died at his home in that place, December 3, aged 86.

Walter Henry Wentworth M.D. College of Physicians and Surgeons, New York City, 1863; acting assistant surgeon, U.

S. Navy during the Civil War; and for many years a practitioner of Pittsfield, Mass.; died suddenly at his home in Providence, R. I., December 7, from cerebral hemorrhage, aged 69.

Asa King Warren, M.D. University of Michigan, Ann Arbor, 1856; for 30 years a member of the board of trustees of Olivet (Mich.) College; for two terms state representative and for one term senator; treasurer of Eaton county; died at his home in Charlotte, December 9, from nephritis, aged 80.

Charles O. Chester, M.D. University of Buffalo, N. Y., 1876; of Buffalo; a member of the Medical Society of the County of Erie; formerly surgeon of the Charity Eye and Ear Dispensary; a specialist on diseases of the nose and throat; died in the Buffalo State Hospital, November 22, from paresis, aged 54.

Benjamin Coffin Taber, a practitioner of Illinois for twenty-five years; then a resident of California, and for the last twenty years a practitioner of Texas, and a member of the State Board of Health; died at the home of his daughter in Dennison, November 12, from senile debility, aged 97.

Frederick William Kirkham, M.D. University of Cambridge, England, 1882; L.R.C.S., Edinburgh, 1882; L.R.C.P., Edinburgh, 1889; a member of the State Medical Association of Texas; county physician of Cameron county; died at his home in Brownsville, September 19, from uremia, aged 51.

Francis Marion Charles, M.D. Howard University, Washington, D. C., 1894; a veteran of the Civil War; and since 1891 a clerk in the office of the Civil Service Commissioner, Washington, D. C.; died at his home in Washington, November 29, from cerebral hemorrhage, aged 66.

James Edgar White, M.D. Rush Medical College, 1883; one of the organizers and supreme medical director of the Court of Honor; until 1906 a practitioner of Urbana, Ill.; died at his home in Springfield, Ill., December 10, from cerebral hemorrhage, aged 55.

Robert E. VanNaten, M.D. Eclectic Medical College of Philadelphia, 1863; a veteran of the Civil War; postmaster of Cooperstown, Pa., for sixteen years and a school director for twenty-six years; died at his home, December 4, from angina pectoris, aged 70.

Oliver J. Thibodo, M.D. Queen's University, Kingston, Ont., 1857; a pioneer practitioner of Phoenix, Ariz; for many years a surgeon on transatlantic steamers; died at the home of his daughter in Los Angeles, November 26, from cerebral hemorrhage, aged 76.

Frederick B. McNeal, M.D. Bellevue Hospital Medical College, 1867; a veteran of the Civil War; elected state dairy and food commissioner of Ohio in 1891 and reelected in 1893; died at his home in Troy, November 30, from pneumonia, aged 70.

Henry Hammond Gallison, M.D. Harvard Medical School, 1872; a member of the American Medical Association; and an artist of considerable distinction; died at his home in Cambridge, Mass., October 12, from cerebral hemorrhage, aged 60.

John A. Swope, M.D. Pennsylvania Medical College, Gettysburg, about 1850; representative from Pennsylvania in the forty-eighth and forty-ninth congresses, and later a resident of Washington; died at his home in that city, December 6, aged 82.

Crawford E. Phillips, M.D. Bennett Medical College, Chicago, 1886; a member of the American Medical Association; formerly of Wilton, Wis.; died September 17, at the home of his son in Scott's Mills, Ore., from pneumonia, aged 57.

Simon Peter Burkhart, M.D. Philadelphia University of Medicine and Surgery, 1872; a practitioner of Blair, Center, and Clearfield counties, Pa.; died at the home of his daughter in Altoona, November 22, from senile debility, aged 75.

Amos Button Heard, M.D. Detroit Medical College, 1872; a veteran of the Civil War; for several terms a member of the borough health board of Northeast, Pa.; died at his home, November 17, from valvular heart disease, aged 75.

William C. Van Buskirk, M.D. New York University, New York City, 1854; M. C. P. and S., Ont., 1877; first mayor and for thirty-five years medical health officer of St. Thomas, Ont.; died at his home, November 10, aged 86.

Benjamin Franklin Spurgeon, M.D. University of Louisville, Ky., 1874; a member of the Medical Society of the State of California; died at his home in Chico, November 23, from disease of the kidney and bladder, aged 57.

Joseph C. Rauth, M.D. Detroit College of Medicine, 1903; a member of the Ohio State Medical Association; coroner of Wyandot County; died at his home in Upper Sandusky, December 8, from typhoid fever, agegd 35.

Rudolf S. Dubs, M.D. University of Berlin, Germany, 1893; a member of the American Medical Association; physician to the Bethesda Home; died at his home in Chicago, December 18, from pleuropneumonia, aged 44.

Richard L. Cook, M.D. Medical School of Maine, Brunswick, 1860; of Sturgeon Bay, Wis.; a surgeon of volunteers during the Civil War; died suddenly in the Union Hotel, Sturgeon Bay, December 9, aged 77.

Horace Fabian Kilgore (license, Minn., 1883, exemption certificate); for more than thirty years a practitioner of Luverne, Minn.; died in Lemon City, Fla., September 6, from hemorrhage of the bowels, aged 76.

Ruffin Coleman, M.D. University of Nashville, Tenn., 1869; of Bouvoir, Miss.; a Confederate veteran; died in the Soldiers' Home, Mountain Creek, Ala., Sept. 24, 1909, from disease of the intestine, aged 64.

Bruce Wallace, M.D. Memphis (Tenn.) Hospital Medical College, 1882; a member of the State Medical Association of Texas; died at his home in Houston, July 31, from heart disease, aged 52.

William Francis Hussey, M.D. Tufts Medical School, Boston, 1905; a member of the Massachusetts Medical Society; died at his home in Roslindale, Boston, December 2, from heart disease, aged 29.

David Foss, M.D. Berkshire Medical College, Pittsfield, Mass., 1861; of Newburyport, Mass.; died in the Homeopathic Hospital, in that city, December 2, after a surgical operation, aged 73.

Everett Grover Cleveland Snider, M.D. University of Louisville, 1910; an intern in St. Vincent's Infirmary, Little Rock, Ark.; died in that institution, October 17, from typhoid fever, aged 26.

Frederick Ghostley, M.D. Minneapolis College of Physicians and Surgeons, 1909; who recently assumed charge of a hospital at International Falls; died at Anoka, Minn., May 3, aged 26.

John S. Watson, M.D. Bennett Medical College, Chicago, 1875; for many years a practitioner of Minooka, Ill.; died at his drug store in that place, December 9, from myocarditis, aged 65.

Job Byron Marcus Dickens, M.D. Eclectic Medical College of the City of New York, 1871; died at his home in Newburyport, Mass., December 3, from cerebral hemorrhage, aged 65.

John S. Shrawder, M.D. Jefferson Medical College, 1865; one of the earliest inventors of motor vehicles; died at his home in Collegeville, Pa., December 4, from acute gastritis, aged 71.

John Hugh Walsh, M.D. Medico-Chirurgical College of Philadelphia, 1908; died at his home in Philadelphia, November 28, from tuberculosis of the lungs, aged 34.

A. Procter Sherwin, M.D. New York Homeopathic Medical College, New York City, 1885; died at his home in Suffield, Conn., November 22, from pneumonia, aged 50.

James A. Cullop, M.D. Kentucky School of Medicine, Louisville, 1893; died at his home in Haskell, November 20, from pneumonia.

Correspondence

Prevention of Perforation in Submucous Resection of the Nasal Septum

To the Editor:—Concerning my article, published November 19, Dr. Albert Bardes suggests (THE JOURNAL, November 26, p. 1910) that we "incise the mucous membrane and perichondrium at B instead of at A and retract. Then dissect forward the tissue anterior to the incision and incise the cartilage at A. This allows the flap B to A to cover the stump of cartilage."

It apparently has not occurred to Dr. Bardes that, if his directions are followed exactly, there will be no stump of cartilage to be covered by the flap B to A. In my article I stated that "this projecting ledge of cartilage was found not only to be completely covered over, but also to appear to aid very materially in holding the edges of the wound in close apposition, acting somewhat as a natural splint." Sev-

eral months ago I did a submucous resection in practically the manner described by Dr. Bardes. This one trial showed me that I was immeasurably increasing the difficulty of the operation, and at the same time doing away with the projecting ledge of cartilage, which I had found of such value. Dr. Bardes concludes his remarks with this sentence: "If this is not done the incised membrane undergoes cicatricial retraction and leaves a dry and crusted surface, besides delaying healing." On the contrary, in my cases, more rapid healing and less crusting has been obtained by the method described than by any previous method used.

I must add, however, that my best results have been in three cases in which I have operated within the last few days, in each of which fine silk sutures approximated the edges of the wound.

RICHARD M. NELSON, M.D.,
Colon Hospital, Cristobal, C. Z.

Uniform Size and Card Index for Reprints and Advertisers

To the Editor:—I wish to suggest that THE JOURNAL use its influence to get some uniformity in the size of folio to be used in reprints of various sorts whether put out by authors or (other?) advertisers. If an index card of uniform size were adopted at the same time by advertisers and publishers and sent out with their articles a great deal that goes into the doctor's waste-paper basket would be preserved, indexed and used. I am by no means the originator of this idea but think it worth being called to the attention of the A. M. A. again.

F. W. STARR, Stanley, Wis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SODIUM CITRATE IN FURUNCULOSIS

To the Editor:—In reply to a communication in this department (Nov. 26, 1910, p. 1911) permit me to inform your correspondent that the formula for sodium citrate, as used in furunculosis in the inoculation department of St. Mary's Hospital, London, where Sir Almroth E. Wright is director and where I was formerly an assistant, is:

Sodii citratis	gr. 2
Sodii chloridi	gr. 20
Aquæ	ʒ 1

Misce. Sig.: Apply externally as directed.

The preferable method of applying this solution is to cut a hole in a piece of oiled silk, or waxed paper, which is just large enough to allow the opening of the furuncle to stick through. Place over this hole a piece of cotton soaked in the solution and cover it with another piece of waxed paper and keep the dressing in place with strips of adhesive. When irritation becomes objectionable leave off for a few hours and resume when it subsides.

F. J. CLEMENGER, Asheville, N. C.

COMPATIBILITIES OF SILVER NITRATE, ALKALIES AND ALKALOIDS

To the Editor:—1. Kindly tell me what excipient I should use in silver nitrate pills. How is it that the silver does not act on the hyoscyamus that is so often prescribed with it?

2. We are told that alkalies and alkaloids should not be combined in a single prescription. If this is the case, should codein be prescribed with potassium iodid or ammonium chlorid? F. A. N.

ANSWER.—1. Silver nitrate should be prescribed in pill form with an inert vegetable powder, such as powdered licorice, with a little gum tragacanth as excipient. These pills should be freshly made. They have the advantage of being readily soluble, but, as silver nitrate acts on organic matter, they are liable to change in time. To obviate this it has been proposed to use wax or paraffin, which produces a mass that does not readily undergo chemical change, but is likely to be only slowly active on account of the insolubility of the excipient. The use of an inorganic powder, such as potassium nitrate or pure precipitated silicic acid, has been suggested. It is probable that kaolin would answer for this purpose and might be made adhesive by a small amount of tragacanth paste. It is probable that silver nitrate acts to some extent on hyoscyamus, if in solution, but if in the dry form, as in pills, there may be little or no change. In the stomach the silver nitrate probably would combine with the organic matter of the stomach secretion rather than with hyoscyamus.

2. Alkalies are incompatible with the salts of alkaloids because they precipitate the alkaloid from solution. The salts of the alkali metals are usually not alkaline, and do not precipitate the alkaloids as a rule. As an exception, we may note that iodids do precipitate solutions of the salts of some alkaloids. Potassium iodid is not an alkali, but a neutral salt. It will not precipitate solutions of codein, but it is usually safest to prescribe potassium iodid by itself. Ammonium chlorid is a neutral salt and does not precipitate alkaloids. It can, therefore, be used with solutions of salts of codein or with those of other alkaloids without danger of precipitation of the alkaloid.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Dec. 17, 1910.

Mason, George L., D.S., December 2, reported for temporary duty at Fort William H. Harrison, Mont.

Bartlett, C. J., capt., December 9, granted leave of absence for one month and fifteen days.

Huntington, P. W., capt., December 9, orders relieving him from duty in the Philippine Islands revoked.

Fife, James D., capt., December 9, on arrival at San Francisco will proceed to Fort Slocum, N. Y., for duty.

Cutliffe, William O., M.R.C., December 13, reports departure from treatment at Walter Reed General Hospital, Takoma Park, D. C., on three months' leave of absence on surgeon's certificate of disability.

Wing, Franklin F., D.S., December 7, ordered to proceed from Fort D. A. Russell, Wyo., to Fort Crook, Neb.; thence to Fort Omaha, Neb.; thence to Fort Des Moines, Iowa, for temporary duty.

McCord, Donald P., M.R.C., December 10, relieved from duty at Fort Ward, Wash., and ordered to Fort George Wright, Wash., for duty.

Demmer, Charles C., lieut., December 10, relieved from duty at Fort Thomas, Ky., and ordered to Schofield Barracks, H. I., for duty on transport sailing from San Francisco March 5, 1911.

The following named officers of the Medical Corps are detailed to take the course of instruction at the Army Field Service School for Medical Officers, Fort Leavenworth, Kan., beginning about April 1, 1911: Reynolds, Frederick P., major; Fauntleroy, Powell C., major; Clayton, Jere B., major; Bispham, William N., major; Bevans, James L., captain; Thompson, Henry D., captain.

Ramsey, William H., C.S., December 8, left Omaha on thirty days' leave of absence.

Craig, Charles F., capt., December 12, detailed to represent the Army at the meeting of the American Association for the Advancement of Science, to be held at Minneapolis, Minn., Dec. 27 to 30, 1910.

Kelly, John P., M.R.C., December 12, on arrival at San Francisco will proceed to his home. Lieutenant Kelly is relieved from active duty in the Medical Reserve Corps, to take effect on the expiration of his leave of absence.

Edwards, George M., lieut., December 13, will make one visit per week for a period not to exceed two months, beginning Dec. 19, 1910, to New York City, for the purpose of making a special study of eye refraction.

Heflebower, R. C., lieut., December 14, relieved from duty at Fort Hamilton, N. Y., and ordered to Army General Hospital, Fort Bayard, N. Mex., for duty.

Long, Charles J., D.S., December 9, reported for duty at Fort Andrews, Mass.

Birmingham, H. P., lieut.-col., and Kean, Jefferson R., lieut.-col., December 14, detailed members of an Army retiring board to meet at Washington, D. C.

Brown, Henry L., capt., December 8, left Fort Morgan, Ala., on fifteen days' leave of absence.

Talbot, E. M., capt., December 13, left Fort D. A. Russell, Wyo., on eighteen days' leave of absence.

Weed, Mark D., lieut., December 16, left Walter Reed General Hospital, Takoma Park, D. C., on ten days' leave of absence.

Medical Corps, U. S. Navy

Changes for the week ended Dec. 17, 1910.

White, E. C., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the *Vicksburg*.

Biello, J. A., asst.-surgeon, detached from the *Vicksburg* and ordered to duty at the naval hospital, Mare Island, Cal.

Woodward, J. S., P. A. surgeon, ordered to duty at the naval hospital, Mare Island, Cal.

Smith, H. L., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered home to await orders.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Dec. 14, 1910.

Brown, B. W., surgeon, relieved from duty at Vineyard Haven, Mass., and directed to proceed to Hongkong, China, for duty.

McCoy, G. W., P. A. surgeon, orders to proceed to Honolulu, T. H., revoked.

De Valin, H., P. A. surgeon, relieved from duty at Havana, Cuba, and, on the return of P. A. Surgeon J. S. Boggess, from leave of

absence, from temporary duty at Chicago, and directed to proceed to San Francisco and report to Surgeon Rupert Blue for duty.

Thompson, L. R., asst.-surgeon, directed to proceed to Almena, Wis., on special temporary duty.

Brooks, S. P., acting asst.-surgeon, granted seven days' leave of absence from Dec. 12, 1910, under paragraph 210, Service Regulations.

Foster, S. B., acting asst.-surgeon, granted fifteen days' leave of absence from Dec. 17, 1910.

Tarbell, B. C., acting asst.-surgeon, leave of absence for thirty days from Dec. 1, 1910, revoked.

Board of medical officers convened to meet at Fort Trumbull, New London, Conn., Dec. 9, 1910, for the physical examination of cadets of the Revenue Cutter Service, to determine their physical fitness for promotion. Detail for the board: Passed Assistant Surgeon G. L. Collins, chairman; Assistant Surgeon H. J. Warner, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

REFRACTING OPTICIANS, THE PUBLIC AND THE MEDICAL PROFESSION

James Thorington, M.D.

PHILADELPHIA

When opticians first applied to the state legislatures for regulation, the medical profession paid little attention, considering it a move to regulate a trade. Soon, however, the opticians commenced calling themselves "optometrists," and their trade a "profession"; i. e., "optometry." Then "optometry boards of examiners" took the right to ask medical questions and thereby made themselves a medical examining board. This fact was and is conspicuously evident as shown in the numerous medical questions asked in examinations given by these "optometry boards."

As soon as the medical profession had its attention drawn to this inroad of the non-medically trained on the field of the profession and the Aemrican Medical Association had passed resolutions[1] against further enactment of such vicious legislation, then such states as Massachusetts, Connecticut, Missouri, Texas, Ohio, Illinois and Maryland defeated the attempts of the so-called "optometrists."

It is important at this time to call the attention of the medical profession to the fact that refracting opticians have commenced their campaign. Petitions in favor of optometry legislation are being circulated among business men and physicians. The *Keystone Magazine*, for December, 1910, prints some of these petitions beginning: "To the Members of the Legislature: We the undersigned business men in your district, etc.," and "To the Members of the Legislature: We the undersigned physicians in your district, etc."

A new legislative campaign is to be conducted in order to get optometry laws enacted in the twenty-four states that have no such laws as yet.[2] Unquestionably, a number of these bills will be submitted to the legislatures in a number of states during the coming winter. So far from having the endorsement of any physician, they should be met with rigid disapproval and condemnation. There is no necessity or justification, either legal or economic, for any such laws, nor can any argument in favor of them be made which is not founded on sophistry.[3] Just as soon as "refracting opticians" receive "recognition" by the passage of an optometry bill, they immediately assume and advertise themselves as on an equality with members of the medical profession, whereas they are not medically trained, and the public is correspondingly deceived. This fact is well evidenced in an optician's circular at hand from which we quote the following:

> "We are to-day approved and accepted as STANDARDS by special optometry laws in twenty-four states which now recognize the practice of optometry equally with that of medicine."[3]

The optometry bill, so-called, legalizes prescribing for eyes by men who are not members of the medical profession, such as opticians, lens-grinders and jewelers. A very considerable proportion of defective eyes are the result of disease or abnormal conditions of the body. This being the case, a bill which licenses an optician to prescribe for conditions which can be recognized and treated only after years of study and training in medicine, may legalize the doing of an irreparable injury. Under the provisions of this bill, practically any man who has made and ground glasses for a period of two years before the passage of this bill can be admitted as a licensed refracting optician. Under this license, without even a smattering of medical knowledge, he can prescribe for the eyes of a man who is suffering from Bright's disease, or from rheumatic troubles, which diseases, and others also, directly affect the eyes, although he knows nothing about the particular disease or the general principles of anatomy, physiology and pathology. Moreover, this bill not only licenses a host of incompetents but it takes away from them all chance of prescribing correctly. Under the provisions of this bill, opticians are not allowed to put drops in their customers' eyes. It is the almost unanimous consensus of opinion among the text-book writers and ocular authorities that the majority of individuals under 35 years of age cannot have their eyes accurately measured for glasses without the use of drops.

By allowing non-medically trained persons to prescribe without this safeguard, inaccurate and harmful measures are legalized by statute. It is the province of the optician to grind lenses in accordance with the prescription of a trained doctor. He has no more business to prescribe for diseases of the eye or to attempt to treat abnormal conditions of the eye than has a shoemaker or glovemaker to treat diseases of the feet and hands. The medical profession, the better class of opticians and the majority of the thinking members of the laity are opposed to these bills because they do not believe in creating a doctor by statute rather than by study and training, and, especially, because the proposed bill not only legalizes incompetent men but also legalizes incompetent methods which are against the weight of all medical authority. For the above reasons the bill has failed to pass in a number of states, namely, Massachusetts, Connecticut, Pennsylvania, Illinois, Maryland, Texas, New Jersey, Missouri and Ohio. In most states where it has passed it was rushed through before the public had been aroused to its evils. It is to be hoped that no measures will become a law which will put the eyes of citizens beyond the pale of medical assistance.[4]

The purpose of this article is to endeavor to explain to the general practitioner that it is his personal duty to himself, his patients and to the medical profession, to oppose, in every way possible, the entrance into the practice of medicine of those who are not medically trained but who would practice on the body as a whole or specialize on any particular organ. As refracting opticians attempt to do the work of ophthalmologists, the great majority of general practitioners immediately get the impression that the passage of optometry legislation does not concern them, though it should be opposed by the ophthalmologists themselves. When it comes to an argument before committees on legislature, the members of the legislature conceive the idea, as general practitioners do not appear with the ophthalmologists in opposition to optometry bills, that it is a case of jealous rivalry. The true explanation of the successful passage of optometry bills in several states is found in the fact that the medical profession did not offer unanimous opposition. Disapproval has been left entirely to ophthalmologists. Naturally ophthalmologists have led the opposition, but only to explain, in detail, the folly of trying to treat the eye without taking the rest of the body into consideration, the impossibility of treating it adequately under such conditions, and also the irreparable harm that may follow from allowing non-medically trained individuals to prescribe for and diagnose diseases of this very important organ. If members of the medical profession had joined ophthalmologists in this endeavor to keep out of the profession those who are not qualified by a course of medical training and a state medical license, the refracting opticians would never have made any inroad into the profession. General practitioners could

1. The Attitude of Physicians on Optometry Laws, THE JOURNAL A. M. A., Oct. 3, 1908, p. 1169.
2. New York Times, Sept. 4, 1910.
3. Pennsylvania Med. Jour., October, 1910.
4. Thorington: Philadelphia Public Ledger, Feb. 19, 1909.

assist the cause of the medical profession if they would instruct their patients in the difference between an examination of their eyes by a specialist who is a doctor and one by the optician or jeweler who parades under the new name of "optometrist" and has never qualified in medicine. General practitioners also could assist by explaining to members of the legislature the interest of the commonwealth in having the eyes of the public, and particularly of children, protected by the members of the profession, and the importance of eyesight to the welfare of the community; also the fact that commercialism does not govern the practice of ophthalmologists, whereas it is a most conspicuous element in the work of the refracting optician.

This communication has been prompted especially by the reading of the excellent illustration of the dangers of optometry by Dr. Janeway.[5]

Surely every ophthalmologist can relate similar instances by the score. Only to-day, a telegraph operator was referred from a neighboring city with a history that he had purchased six pairs of glasses in the last eighteen months prescribed by opticians on account of a severe pain in the right eye. His eyes were found to be practically standard and no glasses necessary. Transillumination and inspection by a rhinologist revealed pus in the right frontal sinus as well as the right antrum, together with nasal polypi.

Instances of glasses having been prescribed by opticians when glasses should not have been ordered are not infrequently seen in private practice and in the clinic. This unfortunate condition of affairs can never cease until the profession demands protection for the citizens of the commonwealth; but the profession must unite and stay united in this demand. It would be a misfortune if the attempt should be neglected too long. If we do not bestir ourselves we shall find our profession sinking every year into deeper depths of restriction and degradation. Doctors do not need to regret the competition of each other, for, if this be fair, it is a stimulus rather than a hurt. The competition that really hurts is from the outside; it is the competition of persons who have never been trained or educated in medicine but who ignorantly attempt to treat patients and to heal the sick.[6]

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—Third Weekly Meeting

II. INFLAMMATIONS OF THE SKIN (CONTINUED)

DERMATITIS SEBORRHEICA: Symptoms, lesions, locations, course. Treatment.

IMPETIGO CONTAGIOSA: Symptoms, lesions, characteristics. Diagnosis.

DERMATITIS HERPETIFORMIS: Symptoms. Varied lesions, course. Diagnosis.

HERPES SIMPLEX: Locations, lesions.

HERPES ZOSTER: Lesions. Regional distribution. Treatment.

LICHEN PLANUS: Symptoms and diagnosis. Treatment.

LICHEN RUBER ACUMINATUS: Symptoms.

ACNE: Age, frequency, characteristics, distribution, course. Acne punctata, a. papulosa, a. pustulosa. Acne indurata. Treatment: General, local, vaccine.

ACNE ROSACEA: Age, frequency, location. Rosacea, followed by acne. Third stage.

SYCOSIS VULGARIS: Sex, age, lesion, distribution. Treatment.

PSORIASIS: Frequency, age, sex, heredity. Primary lesions, development, distribution. Psoriasis punctata, p. guttata, p. nummularis, p. circinata, p. gyrata. Treatment.

PITYRIASIS RUBRA: Symptoms, diagnosis.

PITYRIASIS ROSEA: Symptoms, diagnosis.

5. Janeway, T. C.: THE JOURNAL A. M. A., Nov. 19, 1910, p. 1828.

6. Whery, William P.: Before the Fort Wayne (Ind.) Medical Society, January, 1909.

Society Proceedings

PHYSICIANS' CLUB OF CHICAGO

Regular Meeting held Dec. 2, 1910

DR. JAMES B. HERRICK in the Chair

MEDICAL EDUCATION IN ILLINOIS

The Relation of the University to Medical Education

DR. EDMUND J. JAMES, president of the University of Illinois: I became interested in the subject of education thirty-five years ago when a student of public administration in a German university. Organized society is greatly interested in the health of its citizens, because good health on the part of the body physical is the basis of any good health in the body politic or body social. The health of the citizens depends largely on a sound sanitary policy on the part of the state. A sound sanitary policy can not be carried out by the state without controlling and regulating in many ways the external acts of members of the society. The supreme importance of the medical profession in the history of human society is shown by the records of human experience. As the state developed a definite policy in regard to public health, it came face to face with two aspects of this very necessary development. First, a need of the results of medical education and research in order to carry out a definite policy in public health so far as it interfered with the regulation of the life of the people or the promotion of its common interests, and, second, the necessity of providing for the promotion of the health of its individual citizens outside of the realm of government interference. In order to carry out its sanitary policy, the state needed well-trained servants. The medical men who are going to be good advisers of the government in its sanitary policy, must be men of wide outlook and of great experience. They must be statesmen as well as physicians. Therefore the physician should be a man of liberal education. Twenty-five years ago Dr. William Pepper, provost of University of Pennsylvania, appointed a general university committee to take up the subject of the better integration of the professional schools of the university with the college and technical schools. I was associated with the subcommittee on the medical school, and recommended at that time that the university require for admission to its medical school a completion of the sophomore year in the college of liberal arts, and that a medical course of five years be inaugurated, the first two of which, corresponding to the last two of the college course, should be given to the study of the underlying sciences of medicine—chemistry, physics, biology, anatomy and physiology; that the last year should be devoted to hospital work and the two intermediate years to clinical instruction. I was convinced that, on the whole, the Germans had worked out the best scheme of medical instruction. This scheme consisted, first, in a very thorough, vigorous, intellect-developing secondary school course, extending in theory from the ninth to the eighteenth year of age, extending in practice from the ninth to the nineteenth or twentieth. With this preliminary education the student was permitted to begin his medical study. At that time it was possible for him to complete the entire course in a period of four years. That period has since been extended to five years. But even in that day the desirability of a student spending a year in hospitals immediately on passing the state examination for the practice of medicine was so generally felt that every aspiring youngster took such a year, if it were feasible for him to arrange it.

The future physician should be an educated and cultured gentleman, able to do his part as a thoughtful citizen of a democracy in the support and development of our social and political institutions. Physicians, if of the right type and inspired with the right ideals, may do more to raise social and political standards than members of any other profession.

He should be trained in a thoroughly scientific way. On the basis of this scientific training should be reared the superstructure of the practical application of this knowledge to the treatment of human disease. If the university will set before the community and insist on a standard of: first, a liberal

education; second, a thoroughly scientific training; third, a practical training, then it will have done all that it can do toward preparing and sustaining a medical profession for this great work in the community and the state. I have been greatly pleased with every passing year to see some approximation toward this ideal. I believe that it is fundamental to any possible organization of medical education in this city or this state, that the State of Illinois as a unit should get behind this cause. The state should be supporting medical research and training just as completely and fully as it is supporting agricultural research and training, or engineering research and training, or legal research and training. If we all pull together and get the state to take this initial step, we shall have made the most important advance in this subject which has been thus far registered. For my part I am willing to sacrifice some other things in which I am greatly interested, or at least to postpone adequate provision for these things, in order to make this great step in advance.

If the commonwealth of Illinois will begin the policy of supporting medical research and medical training through the University of Illinois, I believe we shall have made another great step forward toward the time when the City of Chicago will be a recognized center of medical research, medical training and medical skill second to none in this country or, indeed, in the world.

How Can Illinois Obtain Higher Standards of Medical Education?

DR. F. F. WESBROOK, dean of the College of Medicine and Surgery of the University of Minnesota: The health of the individual is not his concern alone; public health is the concern of the public. The state has an interest in every man's condition of health. The means which the individual employs to preserve his health or to cure disease is the business of the public just as much as is the financial standing required for taxation or compulsory schooling of the individual. The public should demand that it be protected against dishonesty, ignorance and incompetence on the part of those whom it would trust with the care of its personal and public health. Everything in which medicine plays a part is public business.

The physician should be a teacher. He should be trained what to teach and how to teach. The honest scientific medical man should always be able to make clear and logical to the layman the basis of his action or his advice in both private or public practice. To bring about results in the various lines of medical activity, we must supervise, first, the foundation of instruction preparatory for medicine. Second, there is the medical training. No matter what specialty is provided, a general knowledge of medicine is essential. Third, a further training in the particular specialty to be taken up.

As to pre-medical training, a knowledge of physics, biology and chemistry is very essential and the acquirement of a modern language is desirable. A knowledge of ethics and of psychology is useful; also a knowledge of the duties of the individual to society as a whole, and that means a knowledge of economics. This is necessary for the individual whose later studies are to be confined to pathologic or perverted structures and functions, whose practical work in life will consist in giving advice and treatment which may call for a readjustment of the habits of the individual. Since medicine of the future will require a great many trained specialists, the medical college should be prepared to offer all students some broad general instruction in many lines not heretofore included in the medical curriculum. The student should receive sufficient information to select wisely his future field of activity and acquire his knowledge and experience before entering that particular field. We must have special training for those who are to become specialists in certain branches, such as surgeons, medical health officers, medical school inspectors, sanitarians, superintendents of hospitals, and medico-legal experts. For all these specialties the university should be the clearing house. A university education is surely a state function, and a state university can and should be made the experimental arm of the state service.

In Minnesota our course has been increased, so that now we have two years of academic work and five years of medical work. All students who take the fifth year must spend it in a hospital approved by the state. These hospitals will be standardized and required to have certain laboratory facilities, to keep proper clinical records, and to do scientific work. We expect also to have courses in public health and medical school inspection in the university. We hope to have a department of hygiene developed under the auspices of the medical college, and, if the need should arise for it, to have a school or college of public health as distinguished from a school of medicine.

DISCUSSION

DR. ARTHUR DEAN BEVAN: I have been asked to open the discussion on these papers on the subject of the needs of Illinois in medical education, and the method of obtaining higher standards of medical education. Before we answer either of these questions, let us see what medical education means to-day not only here in Illinois, but in the United States and in the world. Medicine of to-day is a different proposition from what it was twenty years ago. At that time it was a mass of empirical facts, with very little scientific basis. To-day medicine is just as much a science as is chemistry, physics, or any of the sciences taught in a university, and it has developed into a great mass of useful knowledge. To-day medicine demands a thorough training in order to convert a student into a competent practitioner, a competent medical teacher, or a competent research man. That training as a minimum means a thorough secondary school training; a thorough training in the pre-medical branches of chemistry, physics and biology; a thorough training in the medical school, mostly laboratory work in anatomy, physiology, pharmacology and pathology; a thorough training in the clinical branches of medicine, obstetrics, surgery, and all the specialties. It means, furthermore, besides the course in a medical school, a training that the student can acquire only by spending at least one year as an intern in a hospital. That is practically the conception of medicine to-day in Germany, in Austria and in England. It is the conception also in most of our better schools.

Here, in this country, we have 130 medical colleges. A few years ago we had 166. Of these 130 medical colleges thirty-eight this year required of their students this preliminary training in the pre-medical sciences in addition to the four-year high school course. In these thirty-eight medical schools most of the students also obtain a year's experience in a hospital. I should like to see the hospital year made compulsory by every medical school.

I have shown the general conception of what medicine is to-day, and what a medical education means. Let us turn to the State of Illinois. All the medical schools in Illinois are located in Chicago, and this state has more medical schools than any other state or country in the world. Thre are now sixteen institutions in Chicago which turn out graduates who bear the title of doctor. Of these sixteen colleges, there are five which turn out doctors who legally, at least, are limited in their practice, and there still remain eleven schools which turn out doctors of medicine. Of these eleven medical schools, even on a very lenient marking only six could be included in Classes A and B by the Council on Medical Education which for nearly six years has been conducting an extensive study of medical education in the United States. Only three of these were accepted according to the Carnegie Foundation report. There are, therefore, on this very lenient marking five medical schools in Chicago which the Council on Medical Education could not under any circumstances include among acceptable colleges. These five medical schools are deficient in most or all of the following: Their preliminary requirements do not meet the standard of the medical practice act; their medical course is not strictly graded; the number of expert teachers is too limited or entirely wanting; adequate laboratory facilities are lacking or not used; important laboratory branches are not taught; dispensary and hospital clinical facilities are seriously deficient, absent or not used, or the school is to a large extent a commercial enterprise conducted for what profit or prestige there may be in it for its professors, or it is kept alive by the employment of misleading advertisements or by methods inconsistent with the maintenance of fair educational standards.

In other states reasonably high standards of medical education have been adopted and the present standards are strictly adhered to. A number of low-grade worthless colleges have been closed. In many other states there has been marked progress in obtaining better educational standards and better methods of regulating medical licensure. Illinois needs in medical education these things: fewer and better medical colleges; a more strict enforcement of the present requirements; a four-year high school education as a minimum standard for admission to medical colleges, and later a year or two of college work should be added to the preliminary requirement, this to include physics, chemistry and biology. As an additional safeguard, a thorough and practical examination should be required of every candidate for license. With these changes, the other problems concerning laboratory, dispensary and hospital facilities, would more rapidly approach solution. Illinois should not lag behind, but should be a leader in upholding right standards of medical education.

All this is not so much an indictment of the state board, which is shown by existing conditions to be inefficient, as it is an indictment of the entire educational system of the medical profession and of the people of the state. The solution of this problem is simple. We need a university education to provide educated medical men for the State of Illinois, and we simply demand the protection by an efficient state board against the worthless commercial medical college and the diploma mill.

MR. ARTHUR HERBERT WILDE (Northwestern University, representing President Harris): Northwestern University takes pride in its medical school. It was the first to establish a three-year systematic course of instruction, and also a four-year course, and it did this at great sacrifices. We all stand for higher medical education. That involves several things. First, it involves better prepared students. Northwestern University will require in the Fall of the coming year (1911) a two-year college course as a preparation for the medical course. These two years of college work will better prepare the student for his life work. Besides the well-prepared student, however, we must have well-prepared teachers. We want also more of the German patience and spirit of investigation. We must have complete laboratory facilities such as few schools possess at the present time. We must have certain enthusiasm for the work. I really believe we never shall prepare students and teachers and good laboratory men without the real spirit of higher medical education which is found in enthusiasm. Every school ought to have such laboratory equipment as the University of Chicago provides for Rush Medical College. It ought to have such endowment as Northwestern University has just received from Mr. Patten, who has given two hundred thousand dollars for the purpose of advancing medical research work, and every medical school should have also such enthusiasm as has been infused into the medical school of the University of Illinois by President James. Every school must have endowments. Medical schools are going to furnish a more expensive education, and this expense must be provided for by resources entirely outside of the fees of students. As to the request that is being made by the state university of the legislature Northwestern would say that an appropriation of one hundred thousand dollars is too small. If the state university takes up medical education in a thorough-going manner, it ought to ask a much larger grant.

The state university in its expansion work in medical education might provide lecturers to go from place to place and give lectures in preventive medicine, or first aid to the injured, or some preliminary steps that should be known in every household before a doctor arrives. Public sanitation and domestic sanitation should be taught the people as freely as they are taught agriculture. The City of Chicago should have a Pasteur institute or a Rockefeller institute of research, something as great as either. The resources for the establishment of such an institution in this state are as great as can be found anywhere in the world. The faculty or trustees of Northwestern University would welcome and appreciate as much as any one a college or institute of medical research within the present state university. We have a hearty interest with you in the progress of medical study and medical research, for we are here for the common purpose of enlightenment of the state, and we want to serve our day and generation in our way just as faithfully as we hope the other institutions will serve it in their way.

DR. HARRY PRATT JUDSON, president of the University of Chicago: When we consider the training of young men for medicine in the coming days, we must bear in mind that we have made a tremendous advance in science in the last few decades. Never in the history of the world has science moved so rapidly as now. A young man who is to be a physician must, therefore, have a sound training. A highly trained expert medical man is much more than a mere practitioner. He knows what is going on and how to lend a hand in the right place in the development of modern progressive society, and there will be, therefore, from the highly trained physicians of the future those who will be leaders of social development. There will be, I fancy, a smaller number of men whose genius lies along the lines of scientific medical research. Of course, physicians in general will do more or less of that, but there will be some few who are so trained and who are so expert, and whose enthusiasm is so great, that they will devote themselves, heart and soul, to this one fascinating, fruitful line of medical development. We need such men. In the years to come the advance of medical science will lie largely in the hands of such men. The amount of training to be given young men in these lines cannot be adequate with less than two years of college work as a foundation, and that I believe to be the minimum to-day in the minds of the best men who are connected with our medical schools. It is more important that medical schools should have a small number of properly prepared students than that they should have a large number of ill-trained students. The men who take more time in preparation will be the men of standing in the community.

REV. H. S. SPALDING (Loyola University): With regard to raising the standard of education, we believe in it. We look on Germany as the country that fits in perfectly with our system of education, and any standard that reaches toward that will meet with our approval. I want to say for Loyola University that we have as high ideals as any, and we are willing to work with you and for you in the enforcement of preliminary standards.

MR. W. D. ATMATTER (member of the Legislature of Illinois): This demand for a higher education is serious and ennobling. The king of the corn market (Mr. Patten) gave two hundred thousand dollars to Northwestern University for higher medical education, and I propose that the State of Illinois, which yields a larger corn crop than any other state, should at least give that much for this worthy purpose.

MR. WALTER CLYDE JONES (state senator): I was surprised to find how important it is that the advocates of legislation and its opponents should be in Springfield. If the Illinois State Medical Society and other medical associations are in favor of definite legislation, it is important not only to educate public opinion so that the people will support the physician, but also to send men to the legislature to appear before committees of that body to educate them. It is impossible for any member of the legislature to grasp the important features of the innumerable bills presented unless specialists in the particular subject matter appear before the committees.

DR. G. W. WEBSTER, president of the Illinois State Board of Health: A few years ago I read a paper before the National Confederation of State Medical Examining and Licensing Boards, in which I proposed that the entrance requirements of medical schools should be one year of work in addition to the high school course. It was adopted. I had a conference at the same time with the Council on Medical Education of the American Medical Association in Boston, and told them what was to be done. It was generally understood that this one-year requirement was to be demanded as soon as the conditions would warrant it. In order to prevent the State Board of Health from demanding any such standard, the Legislature of the State of Illinois, at the last General Assembly, took out of the hands of the State Board of Health the power and authority to establish entrance requirements to medical schools. That standard was established by the people of the State of Illinois through the legislature, and was made a high school education. The State Board of Health has no

authority or power to raise that standard in any way. If you want to raise the standard to two years' work in college as an entrance requirement, in which I heartily believe, the first step is to repeal that part of the medical practice act which makes a high school diploma or a high school certificate an entrance requirement, and either leave it in the hands of the State Board of Health to make the standard what it should be, or else through the legislature make the standard such a standard as you demand.

DR. JAMES A. EGAN, secretary of the Illinois State Board of Health, Springfield: There has been considerable said to-night regarding the State Board of Health's lack of enforcement of the law and of the structure of the law. The State Board of Health has limitations of power which have not been brought out, neither has reference been made to the law under which the State Board of Health operates, except in the remarks made by Dr. Webster. Reference was made to the report of the Carnegie Foundation and to the work of the Council on Medical Education of the American Medical Association, whose reports differ on Illinois. Mr. Flexner came into Illinois and dropped off in Chicago in April, 1909, inspected thirty-four schools in the state; inspected our medical schools, and condemned every school in Illinois, except one. He even found fault with that particular school. He condemned the College of Physicians and Surgeons, the Northwestern University Medical School, and other schools, and pronounced Illinois "a plague spot," for the reason that these schools prepared students in contravention to the state laws. Of the schools condemned by him, four of them are now recognized by the Council on Medical Education of the American Medical Association. Who is right, Mr. Flexner or the Council?

Taking up the matter of preliminary education, Mr. Flexner states that "scarcely more than thirty of the one hundred and fifty-five medical schools of the United States enforce a definite entrance requirement." He states further that "similar conditions are repeated in Canada where out of the eight medical schools, three are without enforced preliminary requirements." Mr. Flexner's strictures on the teaching facilities are no less severe. According to his report, only some thirty of the one hundred and fifty-five medical schools "are now fairly equipped with the necessary laboratories." "Fewer than thirty enjoy acceptable hospital facilities." He states further that only about twelve of the one hundred and fifty-five medical schools of the country "have the clinical facilities that they need." It would appear from those statements that conditions found in Illinois are duplicated in other states.

DR. JOSEPH ZEISLER: I believe there are a great many who will agree with me when I say the Flexner report was in many ways one of the most important, one of the most helpful things, that could have happened to the progress of medical education in Illinois and elsewhere. Flexner may have been a little bitter or severe in some instances, but was the report really unjust, when we compare the status of medical education in some of the best schools in this country with that elsewhere, as, for instance, in Berlin, Vienna, Bonn, etc.? Do we not occupy a much inferior position, taking the average medical school in this country, as compared with European schools? I do not wish to enlarge on this thought, except to say that I believe this report, although it struck the school with which I am connected, was a good thing. Let me cite one single instance of medical education in Chicago. I have had occasion for four years to watch the medical career of a person who went through a college in Chicago which has the right to turn out doctors. It was an evening school. That person could not write English grammatically, nor German grammatically. He is a most illiterate person, yet he was accepted by that college, passed through school by paying ten dollars every month, received the degree of "doctor of medicine," and came up for the state board examination. Gentlemen, it is up to the state board, in the examination of persons who are absolutely unfit, to exercise that check which is absolutely necessary for the protection of the people of the State of Illinois. I ask you, gentlemen, does the State Board of Health of Illinois exercise such a check? Is it not possible for such people to slip through on a written examination, which means very little indeed, and be let loose on the populace?

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Nineteenth Annual Meeting, held at Richmond, Va., Oct. 31-Nov. 4, 1910

(*Concluded from page 2174*)

Venereal Prophylaxis

COL. L. MERVIN MAUS, M.C., U. S. Army: The collapsible tube containing 25 per cent. calomel and 75 per cent. lard has been in use in the Department of the Lakes for several months with gratifying results. The great prevalence of venereal disease in the Army led to the adoption of the "K" package, which was large and cumbersome, and which the men would frequently not use, but would throw away. The collapsible tube has a capacity of one dram only, is small, compact and neat. At the military tournament held in Chicago in July these tubes were supplied to the troops with the result that although they were in the city two weeks and surrounded by and having intercourse with the lowest class of prostitutes, not one of the men was infected, as demonstrated by a physical examination made after their return to their home stations. During the time of the maneuver camp at and near Fort Benjamin Harrison, Ind., I had another excellent opportunity to observe the effects of the tubes as regards prophylaxis. The troops of the regular establishment at this camp consisted of twenty-one companies of infantry, eleven troops of cavalry, one company of engineers and one-half a company hospital corps. Each man had a physical examination a few days previous to their arrival, and a test was submitted of those suffering from venereal diseases. All the organizations were supplied with tubes and the men were instructed as to their use. At the close of camp the following statistics were obtained: 504 men had had sexual intercourse 1,301 times, using the tube after each contact. Of these men three reported gonorrhea and of these one made contradictory statements and the other two claimed that they had used the tube but did not understand it. In addition reports were received from 302 men who had had sexual intercourse 763 times and had not used the tube. As a result one man contracted syphilis, twenty-six gonorrhea and twelve chancroids. The proportion of disease in those who used the tubes was ½ of 1 per cent., while among those who did not use them there was 13 per cent. of infection. These facts are exceedingly significant, and I recommend that the War Department issue orders to the following effect:

1. That monthly lectures on general military and personal hygiene be required of medical officers to commands, not only for the purpose of educating the officers and men on these subjects, but to enable them to preserve their health against contagious and other preventable diseases.
2. That weekly physical inspections of companies or detachments be made by an instructed non-commissioned officer, under the direction of the company commander, in undershirts, drawers and bare feet, immediately after the Saturday morning inspection for detection of personal uncleanliness, physical defects, condition of the teeth and feet and contagious diseases, all men suffering from physical disqualification or diseases to be ordered at once to the hospital for the action of the surgeon.
3. That three antiseptic tubes be made a part of the kit of the soldier and that the men be instructed in their use, with such orders as may be necessary.
4. That soldiers found suffering from contagious diseases rendered preventable by the use of the antiseptic measures prescribed, be regarded as having disobeyed a sanitary order and held guilty of violation of the sixty-second article of war.

Pneumonia in the Mexican Army

LIEUT. COL. ENRIQUE JURADO Y GAMA, C.M.M.M., director of the Military Hospital at San Luis Potosi: Pneumonia is a serious disease which has not diminished in spite of the progress of medicine; among armies pneumonia causes great mortality; most often pneumonia effects a spontaneous cure by the successful struggle of the organism; hyperpyrexia and biologic and chemical changes produced in the tissues are the principal causes of the happy termination of the disease; prophylactic treatment of pneumonia is indispensable; there is

no specific remedy for the disease; blisters and antimony salts are useless and dangerous; bleeding is a powerful resource that must be applied in many cases and in different stages of pneumonia; digitalis, strychnin and cardiac tonics have hitherto proved most successful; morphin employed in the form and under the circumstances I have detailed, namely, on the fourth or fifth day, hypodermically, mitigates the exaggerated irritability of the respiratory centers, soothes the orthopnea, subdues pain and slows the respirations, which become deep and regular.

The Navy and Tuberculosis

MEDICAL INSPECTOR C. T. HIBBETT, U. S. Navy, described the U. S. Navy Hospital for Tuberculosis, located near Las Animas, Colo., on the site of the abandoned Fort Lyon, which now has a capacity of 225. He advocates the immediate extension of the sanatorium to quarters for at least 500 patients, and the enlargement of the power-plant to provide for a further extension to accommodate 1,000 patients. The extension of living quarters should be in the line of iron bed cottages for ambulance patients. He further suggests that the general government establish a tuberculosis colony on such site as may be carefully selected for all its official patients, this colony to embrace patients from the Army, Navy, Public Health and Marine-Hospital Service and Civilian employees. For this purpose a tract of several thousand acres would be required, and on this all sorts of farming procedures could be carried on. Educational systems should be substituted for militarism in the government of the institutions, and the men should be instructed as to their preparation for future farm or other open-air life.

Camps of Instruction

A lively discussion followed the reading of the various reports from officers of the organized militia on the camps of instruction in which they served. Lieut. Col. Junius F. Lynch, Surgeon-General of Virginia, was unsparing in his denunciation of joint camps of instruction, calling attention to the unprepared condition of the grounds, delays and inefficiency on the part of the quartermaster's department, the lack of working incinerators and the failure of civilian employees to operate the incinerators which were in working order. He claimed that too much was expected of the organized militia and too little was done for them. He believed that state camps were preferable, and that in these camps, instruction could be given by officers of the regular establishment.

CAPTAIN HENRY D. THOMASON, M.C., U. S. Army, in charge of the Medical Department of the Division of Militia Affairs of the War Department, expressed the opinion that the benefit to be derived from joint camps of regulars and militia were too patent to require demonstration. The massing of regular and volunteer troops is for the best interests of both, and by such instruction the unfortunate sanitary conditions which prevailed several years ago in volunteer camps are now avoided.

Africa and the Tsetse Fly

MAJOR LOUIS LIVINGSTON SEAMAN, U.S.V., New York City, gave a public lecture illustrated by stereopticon views on "The Sleeping Sickness and a Hunting Safari in Africa," in which he described the horrible cruelties practiced in German territorial possessions in Africa, and spoke hopefully of the time when the "Cape to Cairo" railroad and British rule would put a stop to these atrocities. In certain parts of the country the tsetse fly, whose bite transmits the sleeping sickness from the sick individual to a well person, abounds, but only within 150 yards of rivers or streams, not going beyond these limits. The fly is dangerous only where the sleeping sickness prevails. It is the transmitting agency. The incubation period of the disease is seventeen days. The infected person or animal loses animation, becomes weak, enervated and emaciated, and finally the sense of pain is dulled or lost.

Bubonic Plague

PASSED ASSISTANT SURGEON WILLIAM COLBY RUCKER, U. S. P. H. & M.-H. Service, narrated in a most interesting manner the fight made in California against the bubonic plague and the connection of the rat and ground squirrel with the disease. The ground squirrel is the reservoir of plague germs but does not transmit the disease to human beings, but by its bite infects the rat, which in its turn, acting as a germ carrier, bites and infects a human being, who in due course comes down with bubonic plague. For this reason he advocates the extermination of both rats and ground squirrels, but considers the latter as a far greater menace to the community, as ground squirrels exist throughout the country, as rats are everywhere found, and as all that is necessary to start a season of bubonic plague anywhere is an infected ground squirrel or human being. He deplored the fact that for commercial reasons the presence of bubonic plague in California was kept secret so long and asserted that the disease has been smoldering in the United States for a decade. In his opinion the ratproofing of buildings was the most important factor in the solution of the bubonic plague problem.

MAJOR PAUL F. STRAUB, General Staff U. S. Army, told of the experiences with rats and bubonic plague in Manila, where a force of 200 men was organized to trap and kill rats, millions of which were destroyed.

Paybill for Marine-Hospital Corps

The association adopted resolutions asking that the paybill of the United States Public Health and Marine-Hospital Service be revised to correspond with those already in force for the Army and Navy.

Iodin in Military Surgery

COL. NICOMEDES ANTELO, Chief of the Surgical Service at the Military Hospital, Buenos Aires, delegate from the Argentine Republic, who was delayed in reaching Richmond, had prepared a paper on the use of tincture of iodin in the surgery of war. It was read. The following were his conclusions: 1. Tincture of iodin is the ideal skin antiseptic in military surgery. 2. It is desirable to add to the individual first-aid package a receptacle containing tincture of iodin to sterilize the skin at the wound of entrance and exit. 3. In sanitary formations, when a surgeon is present, the field of operation, in case of need, should be sterilized by the Grossich method, that is, washing the region of operation on the previous evening, an aseptic application to be retained until the patient is placed on the operating table and the application of one coat of tincture of iodin at the beginning of the anesthesia, and another when the patient is anesthetized. The hands should be treated with tincture of iodin and then decolorized with sodium hyposulphite, Meissner's method, washing with soap and afterward with alcohol at 90 F. for five minutes, should be employed when it is impracticable to use the Grossich method. 4. The supply of tincture of iodin to the sanitary formations at the front, should be calculated in accordance with its use as described.

AMERICAN ASSOCIATION FOR THE STUDY AND PREVENTION OF INFANT MORTALITY

First Annual Meeting, held at Baltimore, Nov. 9-11, 1910

(Concluded from page 2177)

Municipal, State and Federal Prevention of Infant Mortality

DR. WILLIAM H. WELCH, Baltimore: The United States is particularly far behind other countries in organized attempts to solve the problem of infant mortality. The apathy in this respect is another of the many examples of the way this country suffers from the lack of a thoroughly organized and complete bureau or department of public health under the national government. Municipal health boards have only recently, and only in a very few instances, taken up work in this field with any energy or thoroughness. Work begun by private initiative can often be taken over later more successfully by municipal or state boards of health than if they were called on to initiate the undertakings. It is important to train and supervise midwives and regulate their practice. Between 80 and 90 per cent. of births in a certain class of

the population are attended by midwives. The Maryland midwifery act specifies qualifications and requires registration. Its administration is in the hands of the State Board of Health. A school for the training of midwives is a great need in this country.

Report of the Committee on Birth Registration

DR. CRESSY L. WILBUR, Washington: Much has been done and can be done in the absence of reliable vital statistics to cut down the infant death-rate, but accurate vital statistics are indispensable to the development of an intelligent campaign of prevention. The paramount duty of an association for study and prevention of infant mortality to build up such an "intelligence department" is to give true and exact information for the guidance of active workers in this field of preventive medicine. Infant mortality cannot be stated, as adult mortality is, in ratio to the enumerated population. The infant death-rate must be computed as the ratio of number of deaths of infants under 1 year of age (exclusive of stillbirths) for every 1,000 children born alive. Births must therefore be registered as regularly as deaths. Because we do not register births in the United States, it is impossible to compute a death-rate for babies in any state or in any city in the United States in such a way as to be comparable with the infant death-rate of any other civilized country. Accurate vital statistics of infantile mortality are needed for individual cities, rural districts, states and nation as a whole. Accurate statement requires complete and satisfactory registration of both births and deaths. There is accurate registration of deaths for only about one-half of the total population of the country (55.3 per cent.) and even in states in which there are fairly good registration laws, the equally important or even more important registration of births is neglected. The blame is sometimes placed by health officers on physicians or midwives for failing or neglecting to register births. This is unfair, because the physicians and midwives are not charged with the enforcement of the registration laws, but to obey them. Only a few states have even approximately complete registration of births (90 per cent., or one birth omitted for every ten that occur). Tentative list, New England, Pennsylvania, Michigan and District of Columbia, Ohio and Missouri. Enforcement of the law an essential part of effective administration of any system of birth registration. Model law in force in Pennsylvania since 1905; Ohio, 1908; Missouri since 1909.

What the Obstetrician Can Do to Prevent Infant Mortality

DR. J. WHITRIDGE WILLIAMS, Baltimore: The obstetrician should care for the mother and child not only at the time of labor and the few weeks immediately following it, but should observe the patient throughout the entire course of pregnancy, and as long after delivery as may be necessary to insure her return to normal health. Pregnancy ending in an abortion or by the birth of a dead child is an economic and biologic waste. The live-born child must be put in the most favorable conditions for its further development. The obstetrician may prevent infantile mortality by prophylactic measures before and during pregnancy, by the proper conduct of labor, and by the care of the child during the first month of life.

The Duty of the Municipality in Relation to Infant Mortality

DR. JOSEPH S. NEFF, Philadelphia: Diarrhea and enteritis are terms suggesting no alarm, yet in 1909, in the registration area of the United States in every 100,000 population, 72.3 infants died from these causes, 70 per cent. of these deaths being preventable. In the same year tuberculosis, pneumonia and diarrhea and enteritis caused 43 per cent. of the total deaths from disease without creating any marked public comment. Assuming the mortality in the non-registration area in the United States for 1909 to be the same as in the registration area, much more publicity was given to 19,419 deaths from typhoid fever, in that year's record, than to the mortality of infants, which was 253,268, or a much larger mortality than in any other age period or from any single disease. More time and money has been devoted toward preventing the spread of tuberculosis of the lungs than toward any other health effort, yet the total mortality from that cause last year was 50 per cent. less than the mortality among infants. For economic reasons there is no better investment for a commonwealth than to care properly for the defective classes and provide institutional care for the feeble-minded women during the child-bearing period. I favor the passage of sterilization laws to prevent the illegitimate propagation of the species of the criminal and defective classes. The necessity for safeguarding against an inferior or polluted milk supply is evident. As an example for the benefit of the city councils, a campaign of education was conducted in Philadelphia in the section of the city thickly congested with a foreign population. Through a corps of physicians and professional nurses home instruction was given mothers in the care and feeding of their babies. Results showed 36 per cent. less infant mortality in the districts covered by the municipal nurses than in the rest of the city as compared with the preceding year, notwithstanding the fact that last summer was the most trying one on babies from weather conditions the city has had with one exception in thirteen years.

The Necessity for More Minute Study of the Causes of Infant Mortality

DR. JOHN S. FULTON, Baltimore: The report on infant mortality for 1908, given by the United States Census Bureau, shows that the total deaths in the registration area, under age of 1 year, were 136,432. Causes of earliest death were prematurity, malformation, injuries sustained at birth and syphilis. Convulsions are charged with 5,295 deaths under 1 year. Next come 76,903 deaths caused by whooping cough, diarrhea, diseases of the mouth, suffocation, acute bronchitis, broncho-pneumonia, measles, tuberculous meningitis, meningitis, diphtheria, scarlet fever, tetanus and pneumonia. Total number of deaths from diarrhea was 37,049. Largely through assistance of confederates, bronchitis and pneumonia killed 19,144 infants in the registration area in 1908. A study of sickness month by month, through the first year, will show that nurslings are naturally better defended than their older brothers and sisters from the infections of childhood, and due advantage being taken of this circumstance, these infections, together with bronchitis and pneumonia, can practically be ruled out of the mortality of the first year.

A Statistical Survey of Infant Mortality's Urgent Call for Action

MR. EDWARD BUNNELL PHELPS, New York City: Infant mortality approximately averages about 130 deaths to each 1,000 living births in all civilized countries on the basis of the latest available official data—being almost half again as high in certain European countries. This single fact, the death of at least thirteen out of every 100 babies born alive, constitutes the moving cause for the organization of this Association and similar movements now taking shape in various foreign countries. Owing to the lack of national statistics of births, except in census years, the annual infant death-rates for this country as a whole are not yet available, but there can be little doubt that the infant death-rate in this country has undergone at least a slight decrease in the last decade. Despite that probable fact, as official returns for the city of New York and the state of Connecticut demonstrate, in the third quarter of the current year the infant death-rate of 169 per 1,000 births then registered in the city of New York was precisely the same as that for the corresponding quarter of 1909, and the infant mortality of the entire state of Connecticut was 193 per 1,000 births in the third quarter of 1910, as against 192 per 1,000 births in those months of 1909.

Medical Prevention of Infant Mortality

DR. L. EMMETT HOLT, New York: Excessive infant mortality is one of the large problems of society. It can never be completely solved because its two most important underlying causes, poverty and ignorance, will never be removed. At most

only partial success is possible. Desired results can be reached only by the cooperation of many agencies. At the outset there is needed an intelligent and comprehensive view of the subject as a whole. This will make it possible to separate the causes which are preventable from those which are, in a sense, inevitable. We must first know the facts of infant mortality. This means better vital statistics in the city and country. We need especially complete birth reports, more accurate statements regarding the causes of death, especially in stillbirths and deaths in the early weeks of life. What is more difficult to get at is the causes which underlie these facts. This must be the work of the medical profession. It is only by discovering and influencing the underlying causes that marked results can be accomplished. It is the duty of the profession to concentrate public attention on the large factors which contribute to infant mortality, to insist on a more thorough study of these and suggest means by which they may be reduced. A broad, unified, comprehensive plan should be made at the outset in which all philanthropic agencies shall work together for the accomplishment of the main purpose.

Do Medical Schools Adequately Train Students for the Prevention of Infant Mortality?

DR. IRA S. WILE, New York: Medical schools fail to give adequate training of medical students to enable them to fight the conditions giving rise to such a tremendous portion of the total mortality. Pediatrics is, at present, treated generally under the head of general medicine, though infant mortality involves many conditions which are not comparable with any ailments in adult life. It is generally admitted that one-half of the infant deaths are preventable. Medical schools do not give sufficient attention to the subject of hygiene or prophylaxis. Education is conceded to be the greatest factor in the prevention of infant mortality. Medical schools do not so train men as to make them capable of teaching nurses, interns, mothers or philanthropists. The Council on Medical Education failed to make adequate provision for hygiene or pediatrics in mapping out its ideal medical curriculum. There is a total failure to grasp the underlying social conditions on which infant mortality rests in large part and which physicians must be able to attack in order to prevent infant deaths. The social causes of death are not considered in medical schools. The present teaching of pediatrics is inadequate, the teaching of hygiene is still more lacking, the teaching of the relation of infant diseases to social conditions does not exist. The problems of prevention lie in these three fields and, as they are scarcely entered by medical schools to-day, there results the constant addition to the medical profession of men ill trained and incapable of being of great service in the work of preventing infant mortality.

DISCUSSION

DR. WILLIAM H. WELCH, Baltimore: There is no question that the great need of our medical schools in this country is the establishment of satisfactory training in preventive medicine and public hygiene. We hear equally urgent pleas for almost every subject in medicine. We cannot send the student out adequately trained in any branch; the most that we can hope to do is to give him broad general principles and put him in a way to continue his education. He will not by any possibility be trained in public health or in any aspect thereof when he passes from the medical school, but he should know the importance of the subject, and if his interest lies in that direction, he should be in a position to carry out his functions. But it would be a great misfortune if a medical school without adequate facilities pretended to train men in public health. These results cannot be obtained without large resources.

DR. FRANK WARNER, Colorado: I was surprised to learn that the record of the midwife in New York in the prevention of ophthalmia neonatorum is better than that of the physician. If the result of the teaching already instituted is that the physician does worse than the untrained midwife, what may we look for when the teaching is still greater?

DR. BAKER: One reason why there is less ophthalmia neonatorum among the New York midwives' cases than among the physicians' cases is the fact that during the past two years silver nitrate solution has been used by the former in the eyes of all new-born babies, and as far as I have been able to investigate, this practice is not so prevalent among the medical profession.

DR. W. D. HOSKINS, Indiana: It seems to me that some further explanation might be made of the statement that teachers of diseases of children are the ones deserving of criticism for the lack of time and opportunity in the courses. I rather question the wisdom of such criticism. It is not that these teachers would not like to have more time, greater facilities and better opportunities to elaborate on these preventive measures, but it is impossible to accomplish better results in a short time and with limited means. As far as I have been able to observe they are careful, skilful men who comprehend the magnitude of the social problem, as well as the details of their teaching. And, as far as I have been able to observe, the students who are going out comprehend these things in a greater measure than we might infer from Dr. Wile's paper. As with other specialties, it is impossible to give the department of pediatrics all the time wanted, but a creditable showing is being made by practically all of the medical schools. As far as I know, Johns Hopkins is the only one in which the subject is elective.

DR. IRA S. WILE, New York: I trust that Dr. Welch has not misunderstood that I am advocating that institutions give courses in public health simply to teach how to prevent infant mortality. Since between 40 and 50 per cent. of infant mortality is preventable, the stress of work should be put on preventive medicine. As to there being less ophthalmia among midwives than among physicians, this may be due to the fact that pediatrists do not talk so much about this subject. As to the criticism of Dr. Hoskins, I found that the average time given in a course of pediatrics was sixty hours, the greatest 120 hours, the smallest none. I am not blaming individuals; I am criticizing schools that fail to give this course in their curriculum.

Erroneous Ideas of Infant Mortality and Methods of Reducing It

DR. S. W. NEWMAYER, Philadelphia: In most campaigns there is an effort to educate the mother with a well child, the care of the sick infant being overlooked. Every department of health should have its "publicity bureau," under the charge of a competent newspaper editor, one with at least a working knowledge of medical subjects, especially of those which relate to public health. Gastro-enteritis, which causes most infant deaths, is chiefly due to improper feeding. The feeding of the infant is the responsibility of the physician attending at birth, but is more often left entirely to the mother. The efficiency of health departments in reducing infant mortality would be greatly augmented by the employment of a corps of visiting nurses, or of specially trained physicians, who could give the necessary instruction to mothers in their homes or who could give individual care to the sick babies. The objections made to such measures, on the ground of paternalism, are unfounded. If the infant is not receiving proper nourishment and care, whether through ignorance or neglect, it is the duty of the municipality to give all the personal care and attention it can give.

Vaccine Treatment in the Prevention of Dysentery in Infants

DR. WILLIAM PALMER LUCAS, Boston: In the series of cases studied at the Infants' Hospital, Boston, 100 infants received vaccine in graded doses, from one to three injections being given to each patient of a vaccine made up of the Flexner-Harris dysentery bacillus. The vaccine was not used as a means of treatment, but simply as a preventive measure. All of the patients were infants who had had no sign of dysentery at the time of receiving the injections. The reactions in these cases were studied, and a close watch was kept to see if they developed any acute intestinal trouble throughout the summer. One or more bacteri

ologic examinations were made of each of these cases, and also a parallel series of cases was studied bacteriologically to see how frequently the dysentery organism occurred in this class of cases. The work is merely suggestive and no definite conclusions can be drawn. No bad results were obtained.

The Education of the Father an Important Factor in the Prevention of Infant Mortality

DR. WILLIAM PALMER LUCAS, Boston: We must not overlook the importance of educating the fathers, especially of the poor, congested districts, along the lines of the principles underlying the prevention of infant mortality, for, as the social worker has learned, the father in the families of our foreign population is the actual head of the household. There were several classes formed during this past year under the direction of the Milk and Baby Hygiene Association for the instruction of the fathers in the districts in which several of the milk stations were situated. These met with a fair amount of success and this form of work promises to be of considerable value in gaining the confidence of the family which is of great help in obtaining the best results in a case of sickness among them.

DISCUSSION

DR. HERMAN SCHWARZ: With regard to the education of the fathers, the following figures are interesting: In 210 families where both parents could read, 710 children were born, and there were 135 deaths, or 190 deaths per thousand born; where the parents were illiterate, the death-rate was even higher, so it is shown by statistics that the care of the children is better where one or other parent, or both, could read; it does not seem to make much difference which parent can read. In families where neither parent can read and where there is intense ignorance, the death-rate is much greater.

MRS. WILLIAM LLOYD PUTNAM, Boston: I believe that the fathers are ready for education. Last year a committee of the Municipal League carried on an exhibit every afternoon and evening in Boston. We had a mother with her baby, a doctor and a nurse, and the doctor lectured to the crowds that collected. At times it was interesting to see that there were three or four times as many young men present as women, evidently young fathers. It was evident that these young men were there because they were fathers and anxious to learn.

The Possibilities of Maternal Nursing in the Prevention of Infant Mortality

DR. THOMAS S. SOUTHWORTH, New York: Maternal nursing not only offers new-born infants the best chance of surviving the first year, but lessens the mortality of succeeding years. There are sufficient and insufficient reasons for putting the baby on the bottle. Few women refuse to nurse, but too many who are anxious to do so are prevented from doing so by ignorance or bad advice or misinterpretation of the baby's condition. The stools and behavior of infants getting scanty breast milk lead to a mistaken belief that the milk is bad. Early weaning of infants is unjustifiable until intelligent effort has been made to build up the mother and utilize the breast milk as a part, if not all, of the infant's food. There is no adequate investigation and little scientific or popular knowledge of the function of human lactation. Responsibility for this rests on the state, the educator, and largely on the hospitals for infants and nursing mothers, for these latter do not, as a rule, make the best use of their opportunities for encouraging and disseminating knowledge on this subject.

Method of Determining the Influence of Medical Philanthropy in Reducing the Morbidity and Mortality of Infants

DR. HENRY L. COIT, Newark: Agencies employed for the reduction of infant mortality have directed their efforts along different lines. These are: medical work in hospital wards and clinics where infants are treated; milk dispensaries and consultations independent of hospital supervision; philanthropic association work aside from hospitals and dispensaries; municipal agencies which employ nurses to teach infant hygiene in the home, and state and federal agencies which, by ordinance and law, attempt to influence mortality by determining statistics, regulating the food supply and making more sanitary the homes of the poor. The value of each of these methods of work and their effect on mortality have been variously estimated by those who are engaged in this work with a tendency to over-estimate the value of the special feature in which they are interested. When these various methods of work are combined under the same direction or supervision, it would be desirable if some simple system could be formulated for the collection of facts and statistics which would show the relative value of each kind of work in its influence on the reduction of infant mortality. Statistics are of no value unless they determine how far we have influenced or improved the conditions affecting the care, the physical condition and the living powers of infants. The percentage plan of scoring has been employed to determine the status of social, scientific and commercial investigations; but no comprehensive scoring plan has been adopted which would include in its scope all the conditions which influence the care, the physical condition and the living powers of the infant. The method herewith presented, which consists of a statistical score card, is designed for a careful collection of facts to determine the influence of environment, of management, of nourishment and of morbidity on the viability of the infant and by a graphic chart to show the improvement in viability during a given time through the activities of medical philanthropy and educational work directed to the betterment of the conditions which influence infant mortality.

Educational Prevention of Infant Mortality

DR. HELEN C. PUTNAM, Providence, R. I.: In a democracy, governmental, medical or philanthropic prevention of infant mortality must have intelligent popular cooperation to be successful. This means popular elementary education in the essentials of hygiene, sanitation and the laws of life. Public schools are the universal agent for laying this foundation and we are dissatisfied with their results, our vital statistics being the test. The annual reports of most normal schools emphasize the claim that they are professional. Their health practices and instruction are no better than we find in public schools. They have the same humanitarian need to be standardized as medical schools. Their annual reports exaggerate the value of their instruction in the foregoing respects as often as medical schools exaggerate, according to the Carnegie Foundation Report. Not one of the forty normal schools studied had well-balanced courses in healthfulness of school and of home, in health of the individual and of the community. Their work is largely determined by examinations for licenses to teach. Ninety-three per cent. of the questions are on anatomy. Less than 7 per cent. are on function or on health. I have seen examination papers with none. Students say frankly they do not think the instruction worth while. Examining boards—the pace-makers—can promptly bring normal instruction up to modern needs by suitable questions and tests formulated by health officers, biologists, and school or visiting nurses.

Resolution

The following resolution was passed by the Association: Healthy parents, right customs and wholesome environment being essential factors in preventing infant mortality, be it

Resolved, That boards licensing teachers for public schools should give as detailed tests in elementary hygiene, sanitation, and biology as are given in mathematics or language.

The Study of School Sanitation and Hygiene

DR. HERBERT BURNHAM DAVIS, Pennsylvania: Good parentage is sometimes handicapped by school as well as by home conditions. Dental examinations of children in the practice school by a dentist and medical examinations by a physician are attended by our normal students, who assist in making the records. Through discussion and study of these records an attempt is made to plan a simple outline for examinations by the teacher in an isolated school. Practical demonstrations are given in using disinfectants, cleaning floors, ventilating. Study of backward children in a psychologic clinic is

important, as is that of mechanical factors in school seats causing restlessness and physical defects. All this work has a definite practical direction by practical methods. Normal schools should require all this from every pupil and also studies of sanitary law, sex instruction in public schools, industrial hygiene, and hygiene of the home.

DISCUSSION

DR. HELEN C. PUTNAM, Providence: I have visited at least 600 schools and there were only 210 thermometers, 70 of which were broken and out of order, and the remaining registered in winter weather from 71 degrees to 80. Also bear in mind that there are schools in this country, practice schools connected with normal schools, which are sending out thousands of trained teachers, where I have found the floors oiled with an oil that was put on thick to hold the dirt that fell on them. While it kept down the dust, this was educating the child in an atmosphere filled with the odor of oil, and teaching him to go into the schools without cleaning his feet. These are indications that standard methods of teaching should be urged in this Association.

DR. C. E. A. WINSLOW, New York: From the sanitary standpoint, teachers should have a fundamental training in biology and physiology; second, there should be a course on the relation of the individual to his environment in the spread of disease; third, there should be a practical course, such as has been so admirably described, in school hygiene and sanitation. A method of determining the carbon dioxid in the air should be taught. This course should include also inspection of school buildings, a study of the waste disposal systems, the lighting, desks, etc., of as many schools as possible. We have gone in these campaigns for public health about as far as we can go without the aid of the teachers in the public schools. Some of the schools have already made great progress in solving this problem.

MISS MOORE, Trenton: Every year I find in my class in biology students who are addicted to certain habits, such as sucking the end of their pens or pencils, chewing the finger nails, etc. A good deal of discussion was given in the class of the possibilities for danger in such practices, but frequent lapses would occur. With the cooperation of the class, some experiments were tried. The relation of germs to disease was illustrated by drawing the chewed end of a pencil across the surface of agar, or by making thumb prints on the agar, etc. The results were demonstrated. Altogether, the demonstrations served their purpose in not only emphasizing and giving force to the discussions on this subject, but in introducing into the discussion an element of reality, of tangibility—an element very desirable, as I found, in our campaign against dirt.

DR. HELEN C. PUTNAM, Providence: The chief organisms in dust, those that cause disease, are rather promptly killed by air and sunshine. In the public schools with high temperatures and dusty atmospheres, tuberculosis is invited. The death rate from tuberculosis among teachers is very much above that in any other profession. Reports show that between one-fourth and one-half of the children have latent tuberculosis. Children who die from scarlet fever or diphtheria, where tuberculosis is not suspected, have by examination been found to conceal tuberculosis. The Roentgen ray and the tuberculin test also often reveal latent tuberculosis.

DR. C. O. PROBST, Columbus, O.: It is a question whether the school teacher will be able to fulfil all that we expect of the public schools in teaching health matters. I am inclined to think that we must have a specialist, a school physician, who must have medical education and also special knowledge of the child. I do not believe it possible for a public school teacher to recognize beginning cases of scarlet fever, diphtheria, or other contagious disease. There should be a daily inspection of the schools, and a school physician could accomplish much. I think the day will come when in every large school building in this country, there will be, along with the superintendent, the school physician, devoting all his time and attention to looking after the physical welfare of the child, even to the extent of interrupting its studies when he considers it necessary for the child's health.

The Study of Home-Making

PROF. FLORA ROSE, New York: Home economics where well taught goes straight to the root of infant mortality. It instructs directly, openly, specifically in those things relating to the welfare of homes. Our educational system should consider every pupil as a potential parent. We have normal courses in caring for and feeding babies; we consider mortality rates as affected by abnormal industrial conditions, disease, heredity, environment. We have propaganda work through lectures even to remote country districts; and through free literature dealing with care of infants and of homes. Many urgent requests for instruction in these subjects come to departments of home economics. When graduates are more numerous they will effectively mould public standards of home-making and parenthood, and they are already becoming valuable instruments in preventing infant mortality.

PROF. ABBY L. MARLATT, Wisconsin: In Wisconsin "humanics" comes in the junior year when the students have laid a foundation of bacteriology, biology and physiology along with their household management. We discuss heredity, the influence on the child of alcoholism and other drug habits in the parents, the relation of social evils and their diseases to infant and child mortality and degeneracy; methods in different countries for saving babies; the French system of pensioning expectant and new mothers so that they may be properly housed and fed; education for better parenthood, prevention of vice and of drug habits, of bad housing, and political mismanagement that allows it. We also discuss adolescence, child labor, and vital statistics as related to home-making. The central thought of our four years' course is—conservation of human life by improving homes and cities and individuals so that future generations may reach higher levels of efficiency than those preceding them. The University of Wisconsin is at the head of the state's public school system, and this department is closely related to "domestic science" for the children which we consider very much more than "cooking and sewing."

DISCUSSION

DR. CHARLES FORD LANGWORTHY, Washington: In every state there is an agricultural college which is quite largely supported by government funds, and of the fifty odd colleges of that sort in the United States two-thirds give courses in home economics. It seems to me that of the problems concerned with infant mortality none could be more important than these matters of proper food. We must have fundamental facts available regarding nutrition, and our work has been to gather these facts. This information has been published in leaflets. We have been trying to perfect an instrument with which to study the relative ease of digestion of different foods. Another thing which I should like to do is to study the great problem of overwork, and to study more thoroughly the problems of increasing the efficiency of the housekeeper so that she would not be broken down from overwork.

The Study of Biologic Science

PROF. JESSIE PHELPS, Michigan: We have offered for three years a course in physiology of sex and development. Such biologic instruction is to establish through teachers and schools higher ideals of parenthood. Two hundred and fifty-one have elected it, and nearly all are teaching. The plan is to give scientific setting for personal and sex problems which every teacher has to meet in school. About one-half the time is spent on life histories of familiar plants and animals from lowest to highest, including man, so that the principle of evolution is deeply instilled. Much time is given to the embryology of the chick with demonstration of incubated eggs. This method allows exposition of all the cardinal doctrines of biology and gives a setting for the facts of human reproduction, fundamental character of reproductive processes throughout Nature, place of individual in race, advantages of sex, origin of sex, heredity, continuity of germ plasm, and evidences of evolution. The basic facts of embryology are necessitated by such a treatment, and the way is thus opened for

introduction of the more important topics of human sexual hygiene, standards of courtship and marriage, parenthood, eugenics, diseases spread by prostitution, children's vices, and instruction of children in matters of sex. Graduates are urged to form parent's clubs. They report finding applications for Nature study not before realized, and appreciating much better the far-reaching effects of school sanitation and children's habits.

DR. WILLARD S. SMALL, Washington: Vitality, endurance and healthy functioning are what schools must promote. Biologic science should be studied for this purpose through every year of the normal course, whether two, three or four years. Emphasis should be on processes rather than on anatomy. Study of school hygiene must have it as a background to be effective. Normal school-room practices and care of buildings must be models of hygienic observance as part of the preparation of the teacher. Physical health profoundly affects moral health.

DR. LLEWELLYS F. BARKER, Baltimore: The healthiest mode of approach to questions related to sex is through a study of plant and animal life. The two great factors of life, heredity and environment, can be brought before students in a wholly unobjectionable way, and the analogy of human life is so obvious that the principles learned will almost surely be transferred in due time by the learner to the human domain. Observation and experiment, even if limited to a few fundamental points, will be far more fruitful than didactic lectures. Let the teachers-to-be observe for themselves the influence of external conditions in causing changes in the structure of plants and animals, let them note the responses of living substances to heat, light, oxygen, food substances, poisons and infectious agents, and they will quickly realize the importance of a well-regulated environment for the welfare of human life. Again, let them study pollen and ovule microscopically, observe the process of plant fertilization, and the development of the plant embryo, or permit them to watch frogs' eggs, fish eggs, hen's eggs, and to follow the embryos through their various stages and you have chosen the easiest way to initiate them normally into a knowledge of the mysteries of sex, of impregnation and conception, of birth and development. Experimental hybridizing in sweet peas or in colonies of mice quickly opens the mind to the significance of heredity, and surely nothing is more likely to awaken conscience to the duty and privilege of the human race, of improving the quality of the children born than some acquaintance with the laws of heredity, and especially with the rules of Mendel regarding the inheritance of particular qualities.

If the teachers of our schools knew that drunkards, lunatics, idiots, prostitutes, and habitual criminals are such because in the majority of instances they have been born with defective nervous systems; and if they knew that such drunkards, lunatics, idiots, prostitutes, and habitual criminals are more likely to breed their kind than to have healthy offspring, we should have taken a large step forward in that education of public opinion, which will be necessary before we can pass laws which will prohibit parenthood to the notoriously unfit. If the same teachers knew that a family record of "good stock" on the husband's side and on the wife's side is the best guarantee for the birth of physically, mentally and morally healthy children, they could do much toward the development of that sane opinion about marriage which those who have the good of the people at heart hope may soon displace the abnormal ideas now prevalent, not only among young people, but among their parents, who should know and teach their children better.

DISCUSSION

DR. HELEN C. PUTNAM, Providence: I must take issue with Dr. Barker on one important point. He emphasized the need of teaching women teachers and I think that most educational efforts teach women more than boys and men; I think the balance should be even. In the public schools we must make a special effort to have the boys receive something comparable to what the girls receive in their domestic science work, in order that the boys may become good home makers also.

State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, January 10. Chairman, Dr. W. H. Sanders, Montgomery.

ARIZONA: Phoenix, January 3-4. Sec., Dr. Ancil Martin.

COLORADO: Denver, January 3. Sec., Dr. S. D. Van Meter, 1723 Tremont Place, Denver.

DISTRICT OF COLUMBIA: The District Bldg., Washington, January 10. Sec., Dr. George C. Ober, 125 B St., S.-E.

ILLINOIS: Coliseum Annex, Chicago, January 11-13. Sec., Dr. J. A. Egan, Springfield.

INDIANA: 120 State House, Indianapolis, January 10-12. Sec., Dr. W. T. Gott.

MINNESOTA: State University, Minneapolis, January 3. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

NEW HAMPSHIRE: State House, Concord, January 3-4. Regent, Mr. Henry C. Morrison.

NEW MEXICO: Santa Fé, January 9-10. Sec., Dr. J. A. Massie.

NEW YORK: New York City, Albany, Syracuse and Buffalo, January 31 to February 3. Chief of Examinations Division, Mr. Charles F. Wheelock, Albany.

NORTH DAKOTA: Grand Forks, January 3-5. Sec., Dr. H. M. Wheeler.

OKLAHOMA: McAlester, January 3. Sec., Dr. Frank P. Davis, Enid.

OREGON: Portland, January 3. Sec., Dr. E. B. McDaniel, Electric Building.

RHODE ISLAND: State House, Providence, January 5. Sec., Dr. Gardner T. Swarts.

SOUTH DAKOTA: Aberdeen, January 11-12. Sec., Dr. F. W. Freyberg, Mitchell.

VERMONT: Montpelier, January 10-12. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Spokane, January 3. Sec., Dr. F. P. Witter, 207 Traders' Block.

WISCONSIN: Milwaukee, January 10-12. Sec., Dr. John M. Beffel, 3200 Clybourn St.

South Carolina June Report

Dr. A. Earle Boozer, Secretary of the State Board of Medical Examiners, reports the written examination held at Columbia, June 14-16, 1910. The number of subjects examined in was 18; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 105, of whom 61 passed and 44 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons	(1910)	79, 79, 82, 83
Medical College of Georgia	(1910)	75, 76, 77, 78
Atlanta School of Medicine	(1908)	76; (1910) 76, 83
Atlanta Medical College	(1898)	83
Tulane University of Louisiana	(1910)	78, 85
University of Louisville	(1909)	75
Johns Hopkins University Medical Department	(1910)	85
Baltimore Medical College	(1907)	75; (1910) 81
Woman's Medical College of Baltimore	(1910)	77
University of Maryland	(1910)	78
Harvard Medical School	(1878)	75
Long Island College Hospital	(1905)	86
Jefferson Medical College	(1910)	81
Medical College of the State of South Carolina	(1907)	78; (1909) 75, 75, 75, 76, 79, 79, 80, 83; (1910) 75, 75, 75, 76, 76, 76, 78, 79, 79, 80, 80, 81, 81, 82, 82, 83, 83, 84, 85, 85, 85, 85, 85, 85, 86.
Vanderbilt University	(1910)	84
University of Nashville	(1910)	86
University of the South	(1908)	81
Medical College of Virginia	(1910)	84

FAILED

Howard University, Washington, D. C.	(1907) 72; (1909)	70
George Washington University	(1908)	70
Atlanta College of Physicians and Surgeons	(1908)	73
Atlanta School of Medicine	(1910)	67
University of Georgia	(1908) 64, 69; (1910)	70
University of Louisville	(1908) 63, 72; (1909)	70
Maryland Medical College	(1904) 58; (1905)	45
College of Physicians and Surgeons, Baltimore	(1910)	59
University of Maryland	(1909)* (1910)	71
Leonard School of Medicine	(1901) 69; (1906) 65; (1908) 72; (1909) 70 (1910)	60
North Carolina Medical College	(1908) 67; (1910)	71
Medical College of the State of South Carolina	(1901)* (1908) 50, 67; (1909)* (1910) 65, 66, 67, 68, 69, 71, 72, 72, 73.	
Chattanooga Medical College	(1907)	58
Meharry Medical College	(1909) 60; (1910)	62
Vanderbilt University	(1908) 69; (1910)	71
University of West Tennessee	(1910)	64
University of the South	(1906)*	
Gate City Medical College	(1909)	53

* Grade not given.

Iowa September Report

Dr. Guilford H. Sumner, Secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 12-14, 1910. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 14, of whom 11 passed and 3 failed. Sixteen condidates were licensed through reciprocity. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1909)	80
Northwestern University Medical School	(1910)	84
Illinois Medical College	(1907)	80
Hahnemann Medical College and Hospital, Chicago	(1905)	79
Rush Medical College	(1910)	90
State University of Iowa, College of Medicine	(1910)	93
University Medical College, Kansas City	(1910)	77, 85
Cornell University Medical College	(1908)	90
Jefferson Medical College	(1910)	89
University of Pennsylvania	(1910)	91
FAILED		
Keokuk Medical College	(1898)	68.1
State University of Iowa, College of Medicine	(1906)	†74.2
Ensworth Medical College	(1910)	*73.6

LICENSED THROUGH RECIPROCITY College.	Year Grad.	Reciprocity with
American College of Medicine and Surgery	(1906)	Illinois
Northwestern University Medical School	(1907) (2, 1909) (2, 1910)	Illinois
Rush Medical College	(1908)	Illinois
Hahnemann Med. College and Hospital, Chicago	(1905)	Illinois
College of Physicians and Surgeons, Chicago	(1910)	Illinois
Keokuk Medical College	(1894)	Wisconsin
Ensworth Medical College	(1904)	Kansas
St. Louis University	(1910)	Illinois
University of Nebraska	(1908)	Nebraska
Creighton Medical College	(1907)	Nebraska
Bellevue Hospital Medical College	(1868)	Minnesota
Medical College of Ohio	(1909)	Ohio

* Second examination.
† Sixth examination.

Mississippi October Report

Dr. S. H. McLean, Secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 11-12, 1910. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass 75. The total number of candidates examined was 70, of whom 26 passed, including 8 non-graduates and 1 osteopath, and 44 failed, including 18 nongraduates. The following colleges were represented:

PASSED College	Year Grad.	Total No. Examined.
Kentucky School of Medicine	(1892)	1
Tulane University of Louisiana	(1910)	2
College of Physicians and Surgeons, Baltimore	(1910)	1
Mississippi Medical College	(1909) (2, 1910)	3
Jefferson Medical College	(1910)	1
College of Physicians and Surgeons, Memphis	(1910)	1
Memphis Hospital Medical College	(1910)	4
Vanderbilt University	(1909)	1
University of Nashville	(1902) (1909) (1910)	3
FAILED		
Howard University, Washington, D. C.	(1910)	1
Atlanta School of Medicine	(1910)	1
Louisville National Medical College	(1910)	2
Louisville Medical College	(1904)	1
University of Louisville	(1910)	1
Mississippi Medical College	(1907) (1909) (4, 1910)	6
Memphis Hospital Medical College	(1891) (1894) (1906) (1908) (1909) (4, 1910)	9
Meharry Medical College	(1907)	1
University of Nashville	(1898)	1
University of the South	(1900) (1909)	2
College of Physicians and Surgeons, Memphis	(1908)	1

Arkansas Homeopathic November Report

Dr. P. C. Williams, Secretary of the Homeopathic Board of Arkansas, reports the written examination held at Little Rock, Nov. 8, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 2, both of whom passed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Kansas City Hahnemann Medical College	(1909)	80.7
Cleveland Homeopathic Medical College	(1903)	83.3

Book Notices

A TEXT-BOOK OF PHYSIOLOGY. By Isaac Ott, M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Third Edition. Price, $3.50 net. Cloth. Pp. 891, with 393 illustrations. Philadelphia: F. A. Davis Co., 1909.

The order in which the author has arranged the subject matter in this book is commendable. The first chapter is devoted to a full discussion of the structure and function of the cell, including its various metabolic changes, and reproduction. The succeeding chapters take up in order the chemical constituents of the body, food, digestion, absorption, blood, circulation, respiration, secretion, metabolism, animal heat, muscles, the nervous system, special senses, and reproduction. From a pedagogic standpoint the above order is most desirable, each chapter laying the foundation for the succeeding one.

Such tables as that at the end of the chapter on digestion are of pedagogic value. It is entitled "Résumé of Action of the Digestive and Liver Ferments."

The practitioner of medicine will be especially interested in the subchapter on blood devoted to "Medicolegal Tests;" also the subchapter on "Immunity" discussed from a standpoint of the physicians and giving the latest data on zymoids, antitoxins, agglutinins, precipitins, cytotoxins and opsonins.

The subchapter on internal secretions is unusually full and valuable. The author fails to mention, however, the important work of Brown-Séquard, Poehl, Zoth, Morris, Glass, Loewy and Richter showing conclusively that there is an internal secretion produced by the testes and ovaries, as well as by the thyroid, suprarenals and pituitary. The chapter on metabolism is well arranged; the author has caught the spirit of the modern notions on animal nutrition. The subchapter on animal heat is especially good. The chapters on the central nervous system, the special senses, and reproduction are well presented to give the student to get a good working knowledge of these subjects; but do not present striking characteristics.

CONFIDENCES. Talks With a Young Girl Concerning Herself. By Edith B. Lowry, M.D. Cloth. Price, 50 cents. Pp. 94. Chicago: Forbes & Co., 1910.

Beginning with the blossoming of flowers from the seed, in this book the child's mind is led to the birds, their eggs and nests, and then to the human organs and processes, for the explanation of the elementary facts about the girl's sexual life. The language is inconsistent at times; that is, part of the book is almost in "baby-talk," while other parts are scientific and contain rather long words. This is no material disadvantage, however, as the chapters are in the form of heart-to-heart talks and can be adapted by the parent to the age of the child.

The plan of the book is good in that the account of sexual matters is interwoven with the explanation of objects of nature in which the child is interested and also with hints about general hygiene. This excellent plan will guard against the possibility of the sexual facts assuming too much prominence. The wise parent can add to the general remarks, using this book for a frame-work and not telling the whole story at one time.

Part of the book is most elementary; that is, it aims at being the very first information the little girl may receive; other parts need not be presented until just before puberty, perhaps. There is no attempt at details of anatomy. The only criticism we have on the book is the absence of explanation of the male in the animal world and in the human family, although a foundation has been laid for it in the description of the work of the pollen in flowers. It is true that the male can be ignored for a time, but it will not be long before the girl will ask—of the parent if there is the proper family confidence, or else of a companion—why boys are different from girls. Then the parent would gladly turn to this book again if it offered help on this question, which may be harder to answer wisely than those which have come before. In addition, we feel that social conditions are such that a girl is not adequately safeguarded unless she understands not only herself but the male. We recommend the book.

A SYSTEM OF MEDICINE. By Many Writers. Edited by Sir Clifford Allbutt, M.D., Regius Professor of Physic in the University of Cambridge, and Humphry D. Rolleston, M.D., Senior Physician, St. George's Hospital. Vol. VII. Diseases of the Muscles, the Trophoneuroses, Diseases of the Nerves, Vertebral Column, and Spinal Cord. Cloth. Price, $6 net. Pp. 900, with 98 illustrations. New York: Macmillan Co., 1910.

In this volume are discussed the diseases of muscles, including amyotonia congenita, myasthenia gravis, family periodic paralysis and the neuritic type of progressive muscular atrophy, the trophoneuroses, diseases of the nervous system, nerves, spinal cord and meninges. The advances made in neurology during the past ten years are reflected in the section on diseases of the nervous system. The introduction to neuropathology by Mott and the article on medical ophthalmology by Gowers are new. Diseases of the cauda equina and of the sympathetic nervous system are also included here. Herpes zoster is classed as a nervous affection. Many changes and additions have been made in the articles on myelitis, paraplegia, caisson disease, Landry's paralysis, ataxia and syphilis. Chronic anterior poliomyelitis and amyotrophic lateral sclerosis are described under the caption, "Motor Neuron Disease." The neurologist will be pleased with the presentation of his special subject, because everything new up to the time of publication receives a full measure of attention. The typographic and mechanical part of the book is in keeping with that of previous volumes.

A TEXT-BOOK OF BACTERIOLOGY. A Practical Treatise for Students and Practitioners of Medicine. By Philip H. Hiss, Jr., M.D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, and Hans Zinsser, M.D., Associate Professor in Charge of Bacteriology, Leland Stanford, Jr., University, Palo Alto, Cal. Cloth. Price, $3.75. Pp. 745, with 156 illustrations. New York: D. Appleton & Co., 1910.

This book might well have the title "Medical Bacteriology," inasmuch as the subject is discussed from the medical standpoint—the actual relation of bacteriology to medicine. Only one section of about fifty pages is devoted to the bacteria in air, soil, water, and milk—non-pathogenic organisms. The remaining 660 pages are devoted to the pathogenic germs, their morphology, biology, and methods of study. Thirty pages are devoted to diseases of unknown etiology, such as rabies, small-pox, acute anterior poliomyelitis, measles, scarlet fever, yellow fever, and foot and mouth diseases which are probably of bacterial origin, but in which the germ is as yet ultramicroscopic. The book is adapted more to advanced courses in bacteriology than to introductory courses. The language used is highly technical and the discourse exceedingly technical. The student of medicine who has been properly prepared to carry on the study as outlined in the book will profit from it—but the unprepared and especially the practitioner who wishes to review the subject will find it rather difficult to use the book as a text. Nevertheless it should be recommended for what it is—an excellent medical bacteriology.

WALSH'S PHYSICIANS' COMBINED CALL-BOOK AND TABLET. Flexible Leather, with Flap and Pocket. Price, $1.50. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

WALSH'S PHYSICIANS' HANDY LEDGER. A Companion to Walsh's Physicians' Combined Call-Book and Tablet. Half Leather. Price, $3.50. Pp. 600. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

The Walsh system of medical bookkeeping employs a pocket call-book in the usual form used by physicians, which contains, in addition to the pages for entries, an obstetric record and cash account; an obstetric table; table of eruptive fevers; table of changes in the Pharmacopeia; dose table; table of metric equivalents; and a table of poisons and antidotes. To be used in connection with this is a ledger, each page of which, in addition to the space for the name and residence of the debtor, is arranged so that the transactions for each month are shown on a single line, the particular service being indicated under the date by a character. It also contains space for dates and amounts of payments. The books make a condensed but comprehensive system of bookkeeping for the physician, which can be commenced any month of the year.

HISTORY OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA. 1817-1909. Cloth. Price, $3. Pp. 499, with illustrations. Washington: Medical Society of District of Columbia, 1909.

This book has been prepared by a committee of the society from presidential addresses, volumes of transactions, manuscript and printed records of the society, as well as from current medical periodicals. A large number of photographs contributed by members appear throughout the book, as well as pictures of the various meeting places of the society, and other Washington buildings of historic and medical interest. Two hundred pages are devoted to a history of the society from its organization in 1817 to the present time. The rest of the book is devoted to a list of members arranged in the order of election, with a short biographical sketch of each. An appendix contains the original constitution and by-laws, together with all additions and changes, and the membership of various committees. A copious index of both persons and subjects makes the material in the volume accessible for ready reference. The book is of value not only to members of the Medical Society of the District of Columbia, but also to all interested in medical history. The society is to be congratulated on the volume which its committee has produced.

Medicolegal

Construction of Washington Medical Practice Act as to Persons Entitled to Licenses by Prior Practice—Titles to be Used—Exempting Former Illegal Practitioners—"Practice"

The Supreme Court of Washington affirms, in re Christensen and others (109 Pac. R. 1040), judgments reversing decisions of the Board of Medical Examiners and directing a license to be issued to each of the applicants, who had been for more than two years prior to March 18, 1909, the date of the approval of the law, a resident of the state, and had for the same period been in continuous practice, in one locality in the state, of his or her respective mode of treatment.

This law, the court says, purports to cover the entire subject matter of licensing practitioners of medicine and other modes of treating the sick or afflicted. It does not purport to amend any prior existing law, and expressly repeals all laws in anywise conflicting with its provisions. In section 4 it provides: "Any person who treats the sick or afflicted may register his or her diploma with the board of medical examiners, and receive a license to practice his or her respective mode of treatment, by paying a fee of $10, * * * Provided, that he or she show evidence satisfactory to said board that he or she had been legally engaged in such practice prior to the passage of this act, in the state of Washington, and is a graduate of a legally incorporated school or college * * * ; or by having been in continuous practice in one locality in this state for the past two years. * * * " Section 6, which refers to those licensed on examination, requires the applicant to file "satisfactory testimonials of good moral character, and a diploma * * * ." Section 20: "All persons receiving a certificate or license under this act shall use no deception in the use of titles of his or her mode of treating the sick, but shall use only such titles as are designated by his or her diploma; or those not having a diploma shall use only such title as he or she holds license to practice. * * * "

It was contended in behalf of the Board of Medical Examiners that an applicant must, in addition to showing two years' practice in one locality, have a diploma and register the same with the board before he would be entitled to a license under the provisions of the last clause above quoted from section 4. It must be conceded that the provisions of this law are somewhat involved, and that the question of its meaning is not free from doubt. However, the court is of the opinion that one who has been in continuous practice in one locality in the state of Washington for two years prior to the enactment of this law is not required to furnish further evidence of his qualifications by a diploma, and that such a person would be entitled to a license regardless of the fact of his ever having a diploma.

By section 20 it clearly appears that the legislature had in mind that at least some of those entitled to a license under this law should not be required to show their qualifications by diplomas. It was contended that the words "those not having

a diploma" referred only to a licensee under section 6 on examination, who is required to produce a diploma from a medical school of a certain standing "or satisfactory evidence of having possessed such diploma." But the court cannot agree with that contention. It seems to the court that if a person ever had such a diploma, and is basing his right to a license on it, as he must under section 6, he will be governed in using his title as a practitioner by that which is designated in such diploma, whether he has physical possession of such diploma at that time or not. In other words, if he has or ever had a diploma, and is granted a license on it, then its designation of his title will govern, whether it has any present physical existence or not. He is not one of those mentioned in section 20 as "not having a diploma." The only licensees mentioned in this law that these words could possibly refer to are those who are entitled to licenses by virtue of practice in one locality in the state for two years as provided in section 4. It is quite common, in laws regulating professions and vocations and prescribing qualifications to be possessed by those entering on them, to exempt those already engaged in them from showing any qualifications other than the fact that such persons are already so engaged, or have been so engaged for a certain time. This seems to have been the policy pursued by the Washington territorial and state legislatures. And it has been held that such a provision is not such a discrimination as violates any constitutional right of those seeking to enter such professions or vocations.

It appeared that some of the applicants here were engaged in the practice of medicine and surgery for the two years prior to the passage of this law without having a license required by the law as then existing. This, it was contended, excluded such a person from the right to a license, because he was not legally engaged in practice and therefore was not engaged in practice at all within the meaning of the two years' practice clause of section 4. But it has been noticed that the law here involved is a new and independent act complete in itself, and repeals all former laws on the subject. That part of section 4 following the word "provided" refers to two classes who may receive licenses. The first are persons who have been "legally engaged in such practice prior to the passage of this act." The second are those persons who have been in "continuous practice" in one locality for two years. It may be difficult to see a reason for the legislature exempting one class from the effect of their unlawful acts, and not the other; but the use of the word "legally" in referring to one class, and omitting it in referring to the other, clearly indicates the legislative intent to give the license privilege to the second class, even though they have violated a previously existing license law. The offense was in any event purely statutory, merely a misdemeanor, did not involve moral turpitude, and there is nothing so extraordinary in granting the license privilege by the legislature to those engaged in practice for two years, even though such persons did thereby violate the then existing license law, as to suggest that the court should attribute to the word "practice," as here used without qualification, any other than its ordinary meaning.

In re Harold (109 Pac. R. 1043), decided at the same time that the foregoing decision was rendered, it appeared that the applicant became a resident of the state of Washington, January 1, 1909, having been prior thereto a resident of the state of Indiana and engaged in the practice of medicine and surgery therein. Since then, and until after the enactment of this law, he was engaged in the practice of medicine and surgery in the state of Washington without having a license so to do as provided by the then existing law. In addition to showing such practice in the state of Washington he presented his diploma and evidence showing graduation from a school having the curriculum specified in section 4 of the law.

It was contended in his behalf that, by his showing of graduation from a school having the required curriculum of study and his practice in the state of Washington prior to the enactment of the law, he had thereby complied with all of its requirements, relating to a certain class, entitling him to a license; while it was contended in behalf of the Board of Medical Examiners that since he was not legally engaged in the practice in the state of Washington prior to the enactment of the law he was not entitled to a license, except he prove his qualifications as required by other provisions of the law. Here the court holds that the board was right.

It is manifest, the court says, that at the time this applicant was engaged in the practice of medicine and surgery in the state of Washington from January 1, 1909, until the time of the enactment of this law without having a license so to do, he was violating the plain provisions of the then existing law regulating the licensing of physicians and surgeons. This being true, it needed no argument to demonstrate that he was not "legally engaged in such practice prior to the passage of this act." The court finds nothing in the law warranting its giving to the word "legally" any other than its ordinary meaning. In the decision in re Christensen and others the court recognized that the legislature acted advisedly in using the word "legally" in this clause and omitting it from the two-years' practice clause. The court concludes that within the meaning of the law this applicant was not engaged in such practice prior to the enactment of the law as would aid him in procuring a license thereunder.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

December 3

1 "606," or Dioxydiamidoarsenobenzol (Salvarsan). E. G. Balenger, Atlanta, Ga.
2 Hospital Day Address. C. W. Burr, Philadelphia.
3 Differential Diagnosis of Typhoid. P. H. Markley, Camden, N. J.
4 Present Status of the Psychoneuroses and of Psychotherapy. E. E. Mayer, Pittsburg.
5 *Acute Primary Polymyositis. C. F. Clowe, Schenectady, N. Y.
6 Vaccine Therapy in Acute Infections. E. Martin, Kings Park, N. Y.
7 Surgical Treatment of Non-Malignant Ovaries. R. F. Ward, New York.
8 Pelvic Peritonitis Complicated by Postoperative Hysteria. J. D. Whitall, Philadelphia.
9 Hepatic Syphilis. M. Goldsmith, Pittsburg.

5. **Acute Primary Polymyositis.**—The occurrence of a primary polymyositis or an inflammation of the muscular tissue in general, says Clowe, has been disputed by many observers. By a certain number also the condition has been held to be always a local one. Recently, however, a number of cases have been placed on record, and the clinical picture is so definite a one that there seems to be no room for doubt that the disease may be accepted as a clinical entity. The picture is a clear cut one. A woman, aged 28, family and personal history unimportant, quite of her usual strength, complained of constant pain and weakness in her arms and shoulders. There was a pronounced wrist-drop. By Thanksgiving her trouble had increased and she showed signs of considerable trouble in her legs. After a careful examination made at this time the diagnosis was made. By December 10 the patient could not walk and had marked pain and soreness in all the muscles of the legs and arms. Those most affected were the biceps, flexors of the hand and wrist, the calf muscles and the thigh. The muscles were hard and of a peculiar rubbery feeling. There was at this time no rise in temperature; electric reactions and normal reflexes were present but weak. Appetite was good, bowels were regular but moved with difficulty on account of weakness, needing to be assisted by an enema. Patient slept well but was much annoyed by not being able to turn herself in bed or adjust the bedding. Also was much tired by the effort of holding up her head and trunk.

During January and February the patient improved gradually. Strength returned slowly but contracture became marked. If the hand was extended on the wrist the fingers were greatly flexed and if the fingers were extended the wrist was flexed. The same condition prevailed in the legs. She could only walk by wearing very high heeled shoes. If her shoes were removed, on standing she could not get her heels

on the floor. Examination at various times showed a normal blood-count; no eosinophilia; no bacteriemia at any time; urine normal. During the stage of great weakness she suffered from hyperidrosis. In March and April improvement was more marked; contractions were much lessened. She could walk and use her hands fairly well to sew and feed herself; could comb her hair. There was still more weakness of the extensors than of the flexors; some of the muscles were markedly atrophied. The patient had gained about 10 pounds in weight.

Medical Record, New York

December 10

10 Electric Sleep and Analgesia. L. G. Rabinóvitch, New York.
11 Treatment of Facial Neuralgia by Alcohol Injections. O. Kiliani, New York.
12 Importance in Scarlatina of an Early Bacterial Examination of the Secretion from the Postnasal Region. E. C. Schultze, New York.
13 Fractures of the Skull. A. M. Pond, Dubuque, Iowa.
14 Phenol Injections in Hemorrhoids and Goiter. H. Schiemann, New York.
15 Analysis of Over Thirty-Two Thousand Cases of Scarlet Fever. A. K. Sallom, Philadelphia.

Boston Medical and Surgical Journal

December 8

16 What Medical Societies Can Do for the Health of the People. J. Ritchie, Jr., Boston.
17 *Transmission of Bacteria by Flies with Special Relation to an Epidemic of Bacillary Dysentery. S. T. Orton and W. L. Dodd, Boston.
18 *Brown Séquard's Epilepsy in the Guinea-Pig. A. E. Taft, Palmer, Mass.

17. **Transmission of Bacteria by Flies.**—An organism conforming to the Shiga type of *B. dysenteriæ* was recovered from ten out of fifteen cases examined by Orton and Dodd.

B. prodigiosus planted in the laundry was recovered from flies caught in traps in the scullery and five screened ward dining rooms at an interval of from two to six days after the original plant.

It proves impracticable in most insane hospitals to keep the flies from access to fecal matter and from food when they are present outside in large numbers and, therefore, the best prophylaxis against fly-borne epidemics is in cleaning up the breeding places of the fly to reduce its numbers or eradicate it.

The typhoid fly—*Musca domestica*—breeds in tremendous numbers in decaying vegetable waste of varying sorts, and a search for maggot-infested places with subsequent attention thereto offers the best line of attack.

The house fly's egg to adult cycle is ten days, so that vegetable waste should be cared for at least once a week during fly season.

Horse manure may be treated by chemical means, but it is probable that, if it is kept dry and in the dark, but little breeding will take place. Mixing with many times its bulk of cow manure may prove effective. The authors urge that when possible, all waste material should be ploughed into the land without accumulating. Spreading over the land will probably suffice to reduce the pest markedly.

In hospitals surrounded by considerable ground it is probable that the great majority of flies are home grown, and the extermination of their breeding places is an object which cannot be overlooked.

18. **Epilepsy in the Guinea Pig.**—The work of this report was undertaken by Taft to observe more particularly the transmission from parent to offspring of the "epileptic" and associated conditions. It has been continued during a period of eighteen months, and is based on observations made on 195 animals. Of this number, 68 were subjected to a lesion of the sciatic nerve. The remainder were the normal animals used, and the succeeding generations.

Taft found that lesions occurring in the cord or principal nerve trunks of guinea pigs produce a tendency to convulsions resembling epilepsy in the human subject. The attacks, however, have not been proved spontaneous, but may be elicited by irritation of a specific zone of skin on the side of the face and neck corresponding to the injured nerve. In this series 97 per cent. of the animals in which the sciatic nerve was resected developed convulsions; the remainder, 3 per cent., showed only the scratch reflex. The scratch reflex, the first manifestation of the nervous lesion, developed at the end of a period averaging eighteen days after the division of the nerve. The complete convulsion appeared on an average of one month and nine days following the injury to the nerve and eighteen days after the development of the scratch reflex. Age proved not to be an absolute factor in relation to the time of development of the convulsions.

The zone of irritation varies in extent. The sensitive area is at first limited to the skin over the side of the face. This extends progressively with the further development of the convulsive tendency to include the shoulder and often some distance beyond the border of the scapula. The degree of sensitiveness varies in individual cases. Sometimes merely touching the hair will produce an attack, while in others definite moulding of the skin is required. Trophic changes occur in the zone of irritation, manifested often by falling of the hair, leaving the skin exposed; or it may be the hair becomes brittle and breaks off, thus causing a roughening of the coat. In extreme cases the skin may ulcerate. As a rule, parasites accumulate over the area and there is some anesthesia. The convulsion follows irritation of the sensitive zone and is preceded by the scratch reflex. Following this, the animal falls on its back with eyes closed, insensible, and all its muscles in a state of tonic, followed by clonic, convulsion. The attack is usually brief, but may be spontaneously repeated several times. For some time following the return of consciousness the animal is somewhat stupid and dazed. It was found that the animals would in most cases respond to repeated irritation, though some could be made to react only once without an interval of some hours to a day or more. Severity of attacks depended on the size and physical condition mainly, though no rule could be applied to all cases. Those developing the attack most quickly were subject to the most severe convulsions. The effect of convulsions was productive of a marked loss of flesh, and this bore no relation to the quantity or quality of food given. Lessened reproduction was also universal, and in almost every instance of birth of young they were not alive or died immediately after birth. This was proved not to be due directly to the division of the nerve, for by limiting attacks to not more than one each week, perfectly normal offsprings were born. This would seem to show a marked disturbance in metabolism due to frequent convulsions. The study of 128 offspring of epileptic animals to observe the transmission of epilepsy, reported by Brown-Séquard to have been seen in his series, was absolutely negative. Four young were very weak at birth and died on the second day, but showed no other symptoms. The fact that convulsions in the offspring of epileptic animals always, in Brown-Séquard's experience, existed with a lack of toes, makes it seem possible that there may have been some prenatal injury which would produce the same effect as a division of the nerve. The thirteen young of the second and third generations were also negative.

Virginia Medical Semi-Monthly, Richmond

November 25

19 Diseases a Municipality Can Control and How to Do It. R. K. Flannagan, Richmond.
20 Autotoxemia. R. C. M. Lewis, Marion, Ohio.
21 Symptoms and Treatment of Uncinariasis. J. R. Perkins, Spencer.
22 Early Instruction of Academic Students of Both Sexes as to the Dangers of Alcoholism and Its Associated Evils. V. W. Harrison, Richmond.
23 Probable Hydrophobia. E. W. Brown, Washington.
24 Diphtheria-Membranous Croup. L. Lofton, Emporia.
25 Arteriosclerosis; Diagnosis and Treatment. J. C. Walton, Richmond.

Lancet-Clinic, Cincinnati

December 3

26 Money in Its Relation to Surgery and Medicine. C. S. Bond, Richmond, Ind.
27 Typhoid. D. E. Barnett, Homer, Ind.
28 An Unusual Case. W. H. Ketchum, Hopkinsville, Ky.
29 The General Practitioner and the Specialist. G. Pigman, Liberty, Ind.

Journal of Cutaneous Diseases, New York

October

30 Technic of an Efficient Procedure for the Removal and Cure of Superficial Malignant Growths. S. Sherwell, Brooklyn, N. Y.
31 Multiple Neurofibromata. D. Friedlander, San Francisco.
32 Mycosis Fungoides. B. Roman, New York

Bulletin of the Manila Medical Society

October

33 Occurrence of the Double-Pored Tapeworm in Man. D. G. Willets, Manila.
34 *Production of Immune Bodies without Reaction After Inoculation with Cattle-Plague Blood. E. H. Ruediger, Manila.
35 Gangosa in Guam. J. Garrison, U. S. Navy.
36 *Case of Recurring Abscesses of the Liver. R. Brooks, U. S. Army.
37 Rabies. E. R. Whitmore, Manila.

34. **Production of Immune Bodies.**—According to the results obtained by others and those reported by Ruediger, it seems that animals that do not react after inoculation with cattle-plague blood may produce serum which in immunizing value is equal to, or nearly equal to, serum obtained from animals in which inoculation with cattle plague blood is followed by a good reaction.

36. **Recurring Abscesses of the Liver.**—In March, 1906, an abscess of the liver developed in Brooks' case, which ruptured into the pleural cavity. This was drained through an incision made by resecting a portion of the sixth rib in the right axilla. According to the patient's statement, the pus was of a red color and of a viscid consistency. At the end of three months he was returned to duty and remained well for some time. In October, 1909, the patient was admitted to the hospital again with fever, hepatic tenderness and enlargement of the liver. A diagnosis of liver abscess was made and the pus drained by resecting a portion of the seventh rib in the posterior axillary line. A large quantity of reddish glutinous pus was evacuated, which was not examined microscopically. After a tardy but uneventful recovery he was returned to duty in March, 1910. August, 1910, he was admitted to the hospital with a temperature of 100 F. and a swelling about the size of a lemon in the epigastric region, which moved up and down during respiration. Liver abscess was again recognized and the pus liberated through a median incision. At the time of the operation the liver was adherent to the parietal peritoneum and an abscess of the left lobe was found. The pus presented the same qualities as on the former occasions. On microscopic examination no amebas were found and no growths were obtained on the ordinary culture media. The recurring abscesses in this case are explained by Brooks by assuming that man may become a dysentery carrier for a number of years without any clinical manifestations of intestinal disease, or what appears to be more rational, by assuming that the parasites are capable of remaining latent in one or more hidden foci of infection, and from time to time resuming a pathogenic action.

Detroit Medical Journal

November

38 Salvarsan (Dioxydiamidoarsenobenzol) in Treatment of Syphilis. H. R. Varney and R. C. Jamieson, Detroit.
39 Abortive Treatment of Gonorrhea. W. E. Keane, Detroit.
40 Management and Treatment of Acute Gonorrhea. J. C. Dodds, Detroit.
41 Chronic Urethritis; Diagnosis and Treatment. W. C. Martin, Detroit.

Memphis Medical Monthly

October

42 Recurrences in Malaria. Their Cause and Prevention. W. H. Deaderick, Marianna, Ark.
43 *Prophylaxis and Treatment of the Pernicious Forms of Malaria. H. L. Sutherland, Rosedale, Miss.
44 Uncinariasis. J. H. McNeill, Olive Branch, Miss.
45 Fibroid Tumors of the Uterus. Their Treatment. J. H. Carter, Memphis.
46 Iritis. R. Fagin, Memphis.

43. **Pernicious Malaria.**—As a prophylactic measure against the recurrence of fever, not by a reinfection but because the quinin did not destroy all the parasites, and by rapid multiplication gain sufficient force in a week or ten days to produce a fever, Sutherland pins his faith more on the daily use of quinin than on any other measures, and he thinks 2 grains, three times a day, is sufficient. A prescription which he has used for many years, is:

R		gm. or c.c.	
Quinin sulphate	ʒ	2	8
Aromatic sulphuric acid	ʒ	1	30
Tincture chlorid of iron	ʒ	4	16
Water q. s.	ʒ	8	240

S. Teaspoonful in water three times a day.

He would not recommend to a person who had not had malaria the daily use of quinin as a prophylactic measure, unless it be to one who was making a visit of a week or two into a malarious section.

Atlanta Journal-Record of Medicine

November

47 When Should an External Urethrotomy be Done? T. M. McIntosh, Thomasville, Ga.
48 Headaches and Neuralgias Due to Diseases of the Nose and Accessory Sinuses. H. M. Lokey, Atlanta, Ga.
49 Chronic Non-Suppurative Middle Ear Diseases. G. H. Cooper, Opelika, Ga.
50 Variations in Appendicitis. F. K. Boland, Atlanta.
51 Vaginal Cesarean Section. R. R. Kime, Atlanta.
52 Anterior Poliomyelitis. T. Toepel, Atlanta.
53 Pulmonary Tuberculosis Treated by Artificial Pneumothorax. M. E. Lapham, Highlands, N. C.

Wisconsin Medical Journal, Milwaukee

November

54 *Serum Treatment of Hemophilia. A. J. Patek, Milwaukee.
55 *Tincture of Iodin as a Skin Antiseptic. M. W. Dvorak, La Crosse.
56 Id. W. H. Brown, Madison.
57 Place and Value of the Splint in Minor Surgery. J. C. Hancock, Dubuque, Iowa.
58 Progress of Surgery During the Middle Ages. T. L. Harrington, Milwaukee.

54 and 55. Abstracted in THE JOURNAL, July 23, 1910, pp. 343 and 344.

Montreal Medical Journal

November

59 Tuberculosis of the Kidney. W. Hutchinson, Montreal.
60 Treatment of Tabes Dorsalis. T. A. Williams, Washington, D. C.
61 Sarcoma of the Chorioid. G. H. Thompson, North Adams, Mass.
62 Should Eclamptic Mothers Nurse Their New-Born? J. R. Goodall, Montreal.
63 *Strangulated Hernia. E. J. Williams, Sherbrooke, Que.
64 Fatigue: Normal and Abnormal: Its Significance to the Physician. D. M. Brown, Montreal.
65 Uses of the Roentgen Rays in Surgery. W. A. Wilkins, Montreal.

63. **Strangulated Hernia.**—The patient was a male infant, aged 14 months, who had suffered from a left-sided inguinal hernia since birth. Strangulation had been present for thirty-six hours, and after an unsuccessful attempt to reduce it, with the patient under chloroform, Williams decided to operate. On opening up the inguinal canal and the sac, the contents were found to be cecum and appendix, which latter measured 3 inches in length. After the removal of the appendix and replacement of the intestine into the abdominal cavity the congenital sac was obliterated by a continuous catgut suture and an operation for radical cure was performed. The patient made an uneventful recovery, and did not seem to suffer any inconvenience from the operation at any time.

Alabama Medical Journal, Birmingham

November

66 Gonorrhea Treated with Gonococcus Vaccine. C W. Shropshire, Birmingham.
67 Sympathetic Ophthalmia. H. C. Crelly, Birmingham.
68 Non-Surgical Treatment of Cancer. I. H. Lamb, Washington, D. C.

Washington Medical Annals

November

69 *Case of "Wandering" or Parasitic Fibrocystic Tumor of the Uterus. I. S. Stone, Washington, D. C.

69. **Wandering Tumor of the Uterus.**—In this case a diagnosis of ovarian tumor was made and operation done. After the trocar had evacuated more than a quart of fluid, a growth was discovered, the posterior portion of which was solid or semi-solid; no adhesions or pedicle nor any attachment to either uterus or ovary. Comparatively slight pressure on the flanks caused the sudden expulsion of the tumor. The only place of attachment found was a point near the right parovarium, or between the ovary and fimbriated extremity of the tube. This attachment did not contain large vessels such as are seen in pedicles, and needed neither ligature nor suture; the raw surfaces were closed with fine sutures, as usually done

for the prevention of adhesions. The recovery of the patient was prompt and uneventful. Stone is of the opinion that this tumor was one of parasitic or migratory character, having its origin within the muscular wall of the uterus. Its solid portion was precisely similar to the typical uterine fibromyoma, and its microscopic examination confirmed this observation. The tumor had separated from its uterine attachment by torsion of its pedicle and strangulation of its vascular supply, which ultimately resulted in atrophy of the pedicle and its complete absorption.

Journal of Advanced Therapeutics, New York

November

70 Psoriasis. H. M'Intosh, Boston.
71 Electricity as an Aid in the Treatment of So-Called Functional Diseases. F. B. Bishop, Washington, D. C.
72 Physical Forces in Tuberculosis. C. Pope, Louisville, Ky.

St. Paul Medical Journal

December

73 *Rationale of Transverse Abdominal Incisions. S. S. Hesselgrave, St. Paul.
74 Pathology and Treatment of Puerperal Infection. J. L. Rothrock, St. Paul.
75 Bovine Tuberculosis as a Public Welfare Problem. M. H. Reynolds, St. Paul.

73. **Transverse Abdominal Incisions.**—Hesselgrave claims to get much better results since he began using the transverse incision and since the only important change he has made in the technic is the direction of the incision, he thinks it only fair to ascribe the improvement to the direction of the incision. The vertical incision is poorly supplied with arteries and veins to feed the wound and carry away the debris, and when the recti muscles are forcibly retracted for some time the bruising of the wound margin is a factor in wound reaction and the cause of the "soreness" always complained of after an operation done by this method. The absence of this complaint and the ability of patients to move themselves about unaided directly after the operation are noticeable features of the transverse incision.

The most important advantages of the transverse incision to the operator are: 1. Easier and less tiring operating on account of the direct access to the field of operation and the better view of the area involved. 2. Simplicity, one does not have to learn a multitude of incisions running every which way. It is only necessary to learn the anatomy of the cross section of the abdominal wall above and below the semilunar fold of Douglas and to make an effort to keep the incision within the limits of the semilunar lines. 3. One is never embarrassed for want of space, for if more room is needed than originally thought it can be obtained by extending the incision in one direction or the other, or, if need be, in both directions.

Some of the most important advantages to the patient are: 1. Better looking scar. 2. Stronger union of the aponeuroses. 3. Less pain. This is especially noticeable when the recti muscles are cut, and is due to the absence of spasm of the recti. 4. Less wound reaction. This is due to the fact that the wound margins are not contused by retractors, and to the technic of closing the skin into which no needle nor thread penetrates. 5. Less anesthetic is needed, particularly when the recti muscles are cut, because we have no rigidity to overcome. 6. Greater protection is offered the intestines, which are retained within the cavity surrounded by their normal envelope. 7. Less gauze packing is necessary and we should never hear of a yard piece being left in the abdomen since they are all within reach of the eye. 8. In cases of pendulous abdomen a long lozenge-shaped incision will do away with the skin and fat in this deformity as a preliminary to the proposed operation. 9. Shaving off the pubic hair is not necessary and everyone who has been subjected to this measure has been grateful for its discontinuance.

Yale Medical Journal

November

76 Home Treatment of Neurasthenia. M. Mailhouse, New Haven, Conn.
77 Institutional Treatment of Neurasthenia. W. N. Thompson, Hartford, Conn.
78 Sanatorium Treatment of Neurasthenia. F. R. Hallock, Cromwell, Conn.

Journal of the Michigan State Medical Society, Battle Creek

December

79 *Use of Cancer Residue. J. W. Vaughan, Detroit.
80 *Pelvic Infections. B. R. Schenck, Detroit.
81 *Value of Vaginal Incision in Acute Pelvic Infections. R. Peterson, Ann Arbor.
82 *Management of Breast Feeding. T. B. Cooley, Detroit.
83 Operative Treatment of Convergent Strabismus. R. Connor, Detroit.
84 Coccygodynia. Errors in Diagnosis and Treatment. A. S. Youngs, Kalamazoo.

79. **Cancer Residue.**—The attempt has been made by Vaughan to find proof with regard to the formation of a specific ferment by the injection of the non-toxic proteid of the cancer-cell, through a study of the various blood-elements, particularly the leukocytes, and some interesting findings have been recorded. The cases on which he made his observations, all belong to the inoperable group, cases of uterine, ovarian and breast carcinoma. From a study of the cases cited, and their blood-findings, certain definite conclusions can be drawn. Especially is this true since the clinical course of the disease seems to progress either favorably or unfavorably in direct ratio to the changes in percentage of the white blood-cells that injections of cancer residue produce. Thus, if the percentage of mononuclear cells increases markedly following a residue injection, a more favorable prognosis can be given than if no such reaction is obtained. Many cases in which to the examining eye it appears that all cancer cells can be removed, are in reality inoperable cases, and evidence of this truth is only too frequently shown after operative treatment has been applied. Such cases, however, are regarded by Vaughan as the ideal ones in which to apply the use of cancer residue, since the number of cancer cells remaining in the host after removal of the tumor is sufficiently small so that their total destruction should be assured.

During four and one-half years of trial there has not been a known recurrence in cases belonging to this group. With inoperable cancer, to which group all cases reported here belong, the amount of cancer tissue may be so large that a too rapid splitting up of the malignant cells may be a menace to the patient. Vaughan has had several cases which, after prolonged treatment and large injections, have shown gastro-intestinal disturbances such as diarrhea and vomiting, together with rapid pulse-rate and slightly subnormal temperature. However, since a study of his cases and others shows that large doses do not cause the tumor cells to disappear with the rapidity that small injections do, Vaughan is more prone to attribute these untoward symptoms to the size of the injection. Nevertheless, since every proteid contains a toxic group, it can easily be imagined that too rapid destruction of a large amount of cancer tissue would be of danger to the patient. For this reason, in many instances, he has removed as much malignant tissue as possible before beginning residue treatment. In every case that this has been done, the skin incision has healed by primary union, regardless of whether cancer tissue was macroscopically left or not; consequently Vaughan can see no logical reason why such a procedure should not be adopted.

He impresses the following facts: 1. The injections should always be small in amount, preferably 5 to 10 minims of a ½ to 1 per cent. solution. 2. Injections, according to present knowledge, should be controlled by daily differential leukocyte counts. 3. Injections should be made only when the percentage of mononuclear cells is on the decrease. 4. A good blood-reaction, by which is meant an increase of from 10 per cent. up of mononuclear cells following residue injection, tends toward a favorable prognosis. 5. If the blood-count does not respond, smaller doses should first be tried; if this fails to produce the desired change, different residues should be used until one is found which brings about this result.

80 and 81. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1675.

82. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1585.

Pennsylvania Medical Journal, Athens

November

85 *Fractures of the Shaft of the Femur. End Results. W. L. Estes, South Bethlehem.
86 Barriers to Progress in the Care of the Insane. W. K. Walker, Pittsburg.
87 State Supervision of the Insane. T. H. Weisenburg, Philadelphia.

88 State and County Care of the Indigent Insane. C. W. Burr, Philadelphia.
89 Treatment of Alcoholic and Other Drug Addictions. C. C. Wholey, Pittsburg.
90 Status of the Refracting Optician. W. W. Blair, Pittsburg.
91 *Diagnosis of Duodenal Ulcer with Indications for Operative Treatment. J. H. Gibbon, Philadelphia.
92 *Removal of the Pyloric Portion of the Stomach in Ulcer and Cancer. C. H. Frazier, Philadelphia.
93 The Cancer Problem and the Physician. H. H. Herbst, Allentown.

85. Abstracted in THE JOURNAL, Nov. 12, 1910, p. 1757.

91 and 92. Abstracted in THE JOURNAL, Nov. 19, 1910. p. 1838.

New Orleans Medical and Surgical Journal

December

94 *A Neurodermatologic Case. H. E. Menage, New Orleans.
95 Intracapsular Fracture of the Femur. U. Maes, New Orleans.
96 Ciliary Muscle and Accommodation. T. J. Dimitry, New Orleans.

94. **Neurodermatologic Case.**—A critical analysis of this most interesting case forces Menage to place it in the category of the so-called hysterical gangrene, spontaneous gangrene of the skin, disseminated gangrene of the skin, and dermatitis factitia or artefacta. The diagnosis he made is hysterical gangrene, but of self-inflicted type, as differentiated from the spontaneous class. When first seen the patient, aged 19, presented ulcers on the lower lids and lesions of the conjunctivæ, which apparently had resisted, in a great measure, all lines of treatment. The lesions would improve, almost get well, then suddenly, without known cause, become as bad as ever, if not worse. A tentative diagnosis of tuberculosis of the lids was suggested, but subsequently proved incorrect by the negative tuberculin test applied. As subsequently observed, the ulcers proved to be the result of spontaneous circumscribed and discrete gangrenous patches; the process being complete in an incredibly short space of time. The first crop of the lesions made its appearance about November of last year, above and below the right knee. When Menage saw them, about twenty-four hours after their appearance, they consisted of large, deeply-seated, irregularly-shaped areas of coal-black, hard, gangrenous skin, surrounded by little or no inflammation. The outline, although irregular, was clean-cut and appeared to have been stamped. There were no especial subjective symptoms, no febrile reaction, and no general disturbances of any kind. The patches measured in size, irregularly, from a split pea, to one two and one-half by two inches. In the course of time the sloughs separated, leaving clean, deep-seated, granulating ulcers, which appeared quite healthy. Within a short time, probably two weeks, after the first series, another appeared on the left leg, in about the same relative location and having the same characteristics, except in configuration. From that time to this date the patient has been under observation, more or less constantly, and new lesions have been seen to develop on almost all accessible parts of the body; none, however, quite as severe as in the first and second outbreaks. Menage is not able to say how and with what the patient causes these lesions, or whether the injury is caused with premeditation or unconsciously during a period of somnambulistic or subconscious personality.

American Journal of Physiology, Boston

December

97 Nervous Mechanism of the Righting Movements of the Starfish. A. R. Moore, San Francisco.
98 Effect of Lesions of the Dorsal Nerve on the Reflex Excitability of the Spinal Cord. C. Brooks, Chicago.
99 Study of Faradic Stimulation. E. G. Martin, Boston.
100 Dynamics of Cell Division. J. F. McClendon, New York.
101 Relation of Afferent Impulses to the Vasomotor Centers. W. T. Porter, R. Richardson and F. H. Pratt, Boston.

Louisville Monthly Journal

December

102 Neuritis in Relation to Typhoid. C. Thompson, Louisville.
103 Chorea. B. C. Frazier, Louisville.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

December

104 *Metastatic Gonorrheal Conjunctivitis. W. R. Murray, Minneapolis.
105 Diplomas in Public Health. F. F. Wesbrook, Minneapolis.
106 Organization of Sub-Sections in County Medical Societies. A. S. Hamilton, Minneapolis.
107 Patulous Processus Vaginalus the Predisposing Cause of Oblique Inguinal Hernia. F. R. Wright, Minneapolis.

104. Abstracted in THE JOURNAL, Nov. 19, 1910, p. 1832.

Mississippi Medical Monthly, Vicksburg

December

108 Pneumonia. C. M. Watson, Florence, Ala.
109 Pellagra. J. W. Lipscomb, Columbus.
110 Vaccination and Vaccine Virus. J. T. Longino, Jonestown.
111 General and Local Treatment of Chronic Catarrh of the Nose and Throat. F. J. Underwood, Nettletown.

Interstate Medical Journal, St. Louis

December

112 Duty of the Community Toward Its Consumptives. G. McConnell, Philadelphia.
113 Appendicitis Complicating Typhoid. L. M. Warfield, Milwaukee, Wis.
114 Trypanosomiasis in the Belgian Congo. L. Hollebeke, Brussels, Belgium.
115 *Results of Carl Spengler's "I. K." (Immune Bodies) in the Treatment of Pulmonary Tuberculosis. O. H. Benker, St. Louis.
116 Roentgen-Ray Ink. E. H. Skinner, Kansas City.
117 Advantages of Local Care and Treatment of Tuberculosis. L. F. Flick, Philadelphia.
118 *Treatment of Acne Vulgaris with Acne-Bacillus Suspensions. M. F. Engman, St. Louis.

115. **Carl Spengler's "I. K."**—Benker has used Carl Spengler's "I. K." (Immune Bodies) in eight cases. One patient improved considerably in the subjective state, the lung process slightly improving and the tubercle bacilli disappearing from the sputum. In case 2, the subjective state was aggravated as well as the lung process. The temperature increased from 100 to 102 F. The sputum showed no change either in appearance or quantity of bacterial contents. The six patients in stage III died. The lung process grew progressively worse. The sputum did not show the slightest changes, though three cases were ameliorated in the subjective state.

118. **Acne Vulgaris.**—The treatment of acne vulgaris with suspensions of acne bacillus has proved, in Engman's hands, since a proper technic has been adopted, the most brilliant therapeutic agent yet seen in dermatology. Some of the cases respond as does the membrane in diphtheria to its antitoxin; nothing else in medicine can compare with its action in favorable cases. There is only one drawback in these very favorable cases and that is the lesions undergo such complete and rapid involution that deeper and more marked scars supervene. Nothing demonstrates Wright's negative phase better than these suspensions in acne. Invariably two or more new lesions appear within forty-eight hours after the injection. If a large dose is given, a numerous crop can be produced, and the negative phase prolonged for days. By repeated large doses, a mild case can be aggravated or converted into a severe one with large cystic lesions; and, furthermore, the positive phase in such instances is not clinically evident. Such a patient remains for some time extremely sensitive to any dosage. Such has been Engman's experience with doses of 50,000,000 at seven-day intervals, an experience repeated several times by him. Mild cases stand a larger dose than severe ones; in the latter, continuous small doses give the best results.

Maryland Medical Journal, Baltimore

December

119 Poliomyelitis in America. T. A. Williams, Washington, D. C.
120 *Frequency, Distribution and Importance of Uncinariasis in North Carolina. W. S. Rankin, Raleigh, N. C.
121 The Whys and Wherefores of Tuberculosis in Our State Prisons. T. Cooke, Jr., Baltimore.
122 Salvarsan (Ehrlich's "606"). A. Samuels, Baltimore.

120. Abstracted in THE JOURNAL, May 21, 1910, p. 1720.

Medical Herald, St. Joseph

December

123 *Progress in Obstetrics. A. B. Somers, Omaha, Neb.
124 *Fatigue. G. H. Moody, San Antonio, Texas.
125 Perforating Wounds of the Uterus. P. Findley, Omaha.

123. **Progress in Obstetrics.**—Somers holds that in order to be a good obstetrician one must be a good waiter and never

undertake to expedite matters, only for cause, and lack of time is never a cause. Intelligent, watchful care of the obstetric woman and her child from earliest pregnancy will effect a largely diminished list of mortality and morbidity for mother and child. Infection is the greatest danger to which the obstetric woman is exposed, hence careful surgical asepsis is the field of greatest promise for beneficial results. The obstetrician's duties are not well performed until the mother is restored to her normal condition of health and the baby is established on a diet that produces a satisfactory gain in weight from week to week.

124. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1677.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

November 19

1 Tubercle, Syphilis and Malignant Disease. R. Morison.
2 Roentgen Ray Appearances of Thoracic Aneurysm. A. C. Jordan.
3 Miner's Nystagmus. H. S. Elworthy.
4 The Cause of Neuropathic States. C. R. Jeffrey.
5 Lactic Acid Therapy. O. Grünbaum.
6 Bacteriology of Soured Milk. R. T. Hewlett.
7 Limitations of Curdled Milk Therapy. A. Bryce.
8 *Influence of Sour Milk on Metabolism. V. Harley.
9 *New Facts Concerning Chrysarobin. P. G. Unna.
10 Action of Lime Salts. H. Meyer.
11 *Treatment of Morphinomania by the "Combined" Method. H. C. Miller.
12 Comparative Therapeutic Value of the Organic and Inorganic Compounds of Certain Elementary Bodies. J. M. Fortescue-Brickdale.
13 Action of Hydrastinin and Cotarnin. P. P. Laidlaw.
14 Effects of Digitalis on the Human Heart. K. F. Wenckebach and J. MacKenzie.
15 Therapeutic Use of Digitalis. H. H. Turnbull.
16 Active Principles of Ergot. H. H. Dale.
17 *Treatment of Lobar Pneumonia. A. J. Mathison
18 Direct Methods of Examining the Air and Food Passages. C. von Eicken and D. R. Paterson.
19 Removal of the Tonsils. G. S. Hett.
20 Enucleation of the Tonsil. D. McKenzie and S. Thomson.

8. **Influence of Sour Milk on Metabolism.**—The conclusions drawn by Harley from analyses on metabolism when a small quantity of sour milk is given in addition to the ordinary mixed diet can be placed under two heads: First, the influence on increased intestinal putrefaction: The quantity of the aromatic sulphates is seen to be decreased, although this is not in any considerable quantity, but in none of the cases were the aromatic sulphates very large to commence with. The increased indican in the urine also appeared to be somewhat decreased in quantity. In all the cases the stools became much less offensive in odor when a small quantity of sour milk had been added to the diet. The results of Schmidt's fermentation test further indicated a decrease in the intestinal putrefaction, and the marked alkaline condition of the stools tended to become either neutral or even acid. The chemical analyses gave indications that there was a decrease in the intestinal putrefaction. Secondly, the influence on the absorption of food: The quantity of nitrogen in the stools is certainly increased by the addition of sour milk to the diet, and this increase in the quantity of nitrogen present causes the apparent decrease in the absorption of nitrogen by the bowel. It must be here remembered that the nitrogen contained in the stools is not really the nitrogen in the food, which remains undigested; but is the nitrogen contained in the various secretions that are eliminated into the bowel, together with mucus, epithelial cells, and the remains of numerous bacteria in the intestine; so that, although the nitrogen absorption may apparently be decreased, there is in all probability no real decrease in the absorption of nitrogen. The fat, however, in the stools, appeared to be slightly increased in quantity in two cases. The analytic results of the absorption of the food after the addition of small quantities of sour milk to an ordinary diet do not apparently point to any better absorption of food.

9. **Chrysarobin.**—Unna proposes a generous use of chrysarobin siccatifs and of ointments containing, besides chrysarobin, oleates of lead. After a year's experience, he recommends this form of treatment of psoriasis as an especially quick and thorough one.

11. **Treatment of Morphinomania.**—The details of the treatment which Miller recommends are as follows: 1. A course of nine weeks in a nursing home or similar institution. He considers this period as long as desirable and yet short enough to bring the cure within the reach of most patients. 2. Examine the patient and make sure there is nothing to contra-indicate the treatment. 3. Explain to the patient very fully the nature of the cure. Let him see that you do not mean to treat him as a criminal, but that you want to help him. Explain that you will allow him practically as much morphin as he asks for during the first three days, and that by the end of that time he will be sound asleep, and free of the craving. 4. During the first three days of treatment, the patient should get a diminishing number of injections of diminishing strength, and on the third day the injections should be per rectum. 5. Before each injection he has to take a draught containing 5 grams of sodium bromid. The total for the three days should work out at about 100 grams. By the end of the third day both bromid and morphin are stopped, and the patient will be in a comatose or semicomatose condition which will last for three to six days more. 6. During all this time the patient is roused to take milk at regular intervals, and to be placed on the commode to empty bowel and bladder. 7. When the effects of the bromid begin to pass off there will be in all probability a certain amount of mental confusion, including hallucinations, delusions of persecution and so on. These will pass off soon. 8. As soon as the patient appears to be sufficiently sensible, efforts should be made to hypnotize him, and the lethargic state he is in will materially assist. Suitable suggestions must be made without waste of time, lest the craving should reassert itself before the mind is sufficiently influenced. This is the critical point of the whole cure. 9. As soon as possible the patients should be brought into one room and hypnotized collectively. This Miller considers of very great importance, as would any one who has seen the method practiced abroad. All the most successful exponents of treatment by suggestion on the Continent lay great stress on the value of this method —Bertillon, Van Renterghem, the late Dr. Wetterstrand, and many others. It serves two purposes: (a) to facilitate the hynotization of obstinate patients; (b) to enhance the effect on all that respond. 10. During this period, that is, from the second to the end of the seventh week, the patients should be strictly supervised, and no access to drugs allowed. Everything is done to make life interesting, and to promote the general health of the patient. 11. During the eighth and ninth weeks the patients should be allowed to keep their morphin and syringes. The hypnotic sittings should be reduced in number, and should have special reference toward teaching the patient to put himself to sleep, that is, autohypnosis. Autohypnosis is, says Miller, a mental knack or trick that can be acquired through hypnotic suggestion by all but a certain percentage of mental invertebrates. Once acquired, this power will serve to give the patient in the future a ready refuge from worry or pain, or anything else that might lead to thoughts of morphin.

17. **Treatment of Lobar Pneumonia.**—The central fact in this paper is the employment of a certain drug combination in twenty cases of lobar pneumonia, with no mortality, but with abortion of four of the cases. The treatment advocated is the administration from the time of diagnosis of a combination of creosote and potassium iodid. Mathison gives, from the time of diagnosis, the following prescription, and to minors one of strength proportionate to their age: Potassium iodid, 1 dram; creosote, ½ dram; rectified spirit, 2 drams; liquid extract of liquorice, 3 drams, or 4 drams of the older Pharmacopeia preparation. Water to 6 ounces. A tablespoonful to be taken every four hours. In this combination the antiseptic action of creosote limits the extension of the pneumonic process. It directly opposes the invaders, probably by making the circulation an unsuitable haunt for them, and perhaps also by digesting enzymes. The iodid, stimulating cell action, loosens the exudate. The fluxion is diminished by the quieting effect both drugs have on the heart, by their

combined diuretic action, and by the reduction of blood-pressure by the iodid.

Dublin Journal of Medical Science

November

21 *Syphilitic Reinfection. H. FitzGibbon.
22 Sterilization of Certain Degenerates. R. R. Rentoul.
23 Catalogue of the Library of the Royal College of Surgeons of England. V. G. Plarr.

21. **Syphilitic Reinfection.**—The patient whose case is cited by FitzGibbon received syphilitic infection in June or July, 1906, which was followed by the development of complete syphilis early in August that year. He recovered under treatment by intramuscular injection of mercurial cream within twelve months. There was an interval of perfect health from any symptoms from syphilis from April, 1907, until October, 1909, during which time no treatment was undergone. About this time he exposed himself to the risk of infection, which was followed by a characteristic chancre, and the subsequent sequelæ usual in recently acquired syphilis, such as inguinal adenitis, sore throat, etc., which left no doubt of the case being one of reinfection of syphilis which must have taken place in the end of October, 1909, about the time that the patient admitted the exposure to have taken place. The dates of the respective infections were approximately July, 1906, and October, 1909, leaving only an interval of three years and three months between the first infection and the date of the reinfection. The possibility of a second syphilitic infection taking place in a person who has previously contracted syphilis and recovered from it has long since been proved beyond question by the number of cases which have been recorded on reliable authority, but the interval between the first and second infections has always exceeded five years. FitzGibbon regards his case, therefore, as quite exceptional in view of the shortness of the interval which intervened between the first attack of complete syphilis and the second infection.

British Journal of Children's Diseases, London

November

24 Data and Tests in the Study of the Exceptional Child. M. P. E. Groszmann.
25 Auricular and Peri-Auricular Dermoids, Fistulas and Tumors of Congenital Origin. J. H. Evans.
26 *A Case of Lymphosarcoma. G. F. Vincent.

26. **Lymphosarcoma.**—Vincent first saw this patient, a boy, aged 9 years, on July 9. His mother noticed on the night previous while giving him his bath that his abdomen was enlarged; that he had vomited once or twice, and that the bowels had acted three times that day. She said that two or three weeks before this some friends had remarked to her that he was not looking well and seemed paler and somewhat thinner, but she had not noticed it herself. When Vincent saw him the temperature was 97 F. and the pulse 100. The stomach appeared to be distended and the costal arches were pushed forward. A considerable amount of free fluid could be detected in the abdomen, and percussion did not give rise to any pain. On July 10, his temperature was 97 F. and pulse 104, and the distention of epigastric and hypogastric regions was more pronounced. He complained of a slight pain occasionally in the right hypochondrium and had some difficulty in micturition. He vomited once and the bowels acted three or four times during the night. He measured over the epigastrium 26 inches, over the umbilicus 23½ inches, and from the xyphoid cartilage to the umbilicus 6½ inches. On July 11, temperature was 97 F. and pulse 108. He did not complain of any pain, but lay in bed reading. An incision was made in the mid-line, when about 4 pints of clear fluid came away. On inserting the finger Vincent felt a large swelling about 3 by 2 inches attached to the anti-mesenteric border of the hepatic flexure, with several swellings the size of a marble dotted over the intestine above and below this; also a swelling the size of a hen's egg surrounding the gall-bladder. Through the incision he pulled out the growth with a portion of the intestine, but in doing so it broke, for it was very brittle, although its walls appeared to be about ½ inch thick. As the gall-bladder and a large part of the intestine were involved, Vincent decided not to proceed further with the operation. He was also suffering considerably from shock, and vomited about half a teacupful of coffee grounds. Vincent replaced the swelling, put in a large drainage tube, and sent him back to bed. He died in thirty-six hours. The necropsy showed the growths on the intestine and gall-bladder mentioned, also large nodules on the lesser curvature of stomach and duodenum.

Annales des Maladies des Org. Génito-urinaires, Paris

October 15, XXVIII, No. 20, pp. 1825-1920

27 *Hydronephrosis with Horseshoe Kidney. (Sur trois nouveaux cas de rein en fer à cheval.) E. Papin and E. Christian.
28 *Cancer of the Prostate. H. Young (Baltimore).

27. **Horseshoe Kidney.**—Papin and Christian report three additional cases, with hydronephrosis in two of them. They have also found nine operative cases on record of hydronephrosis with horseshoe kidney with operative treatment and fifteen cases in which the trouble was first noted at necropsy. Bilateral hydronephrosis in a horseshoe kidney has never been encountered during life. The heminephrectomy in the nine operative cases was successful in all but one; in this the fact that the kidney was of the horseshoe type was not recognized until the attempt had been made to remove the whole kidney mass. Fatal hemorrhage followed from laceration of a large vessel. Albarran did a ureteropyeloneostomy with successful outcome in one of the cases, establishing the possibility and advantages of more conservative measures than the usual heminephrectomy.

28. See THE JOURNAL, March 5, 1910, page 784.

Archives des Maladies de l'App. Digestif, Paris

October, IV, No. 10, pp. 561-624

29 *Hypersecretion in Fasting Stomach in Relation to Ulcer. W. Oettinger.
30 The Psychic Gastric Secretion in a Gastrostomized Patient. R. Hertz and S. Sterling.

29. **Hypersecretion in Fasting Stomach.**—Oettinger regards pure gastric hypersecretion in the fasting stomach as a sign of disturbance both in the secretory and motor functioning, and says that in at least 72 per cent. of the cases it is the result of an ulcer or ulceration in the stomach. If besides the hypersecretion there is also stagnation of stomach content, the conditions favor autodigestion of the stomach wall. Among seventy-five patients with more or less gastric juice in the fasting stomach, he found fifty-four with "occult" blood in the stool. The hyperacid conditions in the stomach are liable to entail secondarily spasmodic contraction of the pylorus, or gastroptosis or the effect of corsets may aid in the vicious circle. Even in all the twenty-one cases in which the stools were free from blood, there was a history of more or less gastric discomfort, loss of weight, etc., or actual pain.

Archives de Médecine des Enfants, Paris

November, XIII, No. 11, pp. 801-880

31 *Pathology of the Thymus. A. B. Marfan.
32 *Glioma of Base of Brain. A. Halipré.

31. **Pathology of the Thymus.**—Marfan concludes from his research that some chronic infection or intoxication is generally responsible for simple hyperplasia of the thymus. Syphilis and tuberculosis are the principal factors, and tentative antisyphilitic treatment may prove successful even in the absence of a known history of syphilis. If no benefit is derived from it, general treatment for glandular enlargement should be instituted. Injection of adrenalin, 2 to 4 drops a day of the 1 per thousand solution, seems to have a favorable action on hyperplasia of lymphoid tissue in general, and Marfan suggests its use in case of hypertrophy of the thymus. With threatening symptoms from compression of the air passages, radiotherapy, thymectomy or intubation may be considered. If there is no immediate urgency, radiotherapy might be given a fair trial. Friedländer has reported entire subsidence in an eight weeks' babe of severe respiratory disturbances under twelve Roentgen-ray exposures in thirty days, and Myers has reported similar success in another case, although he had to make forty-seven exposures in the course of three months to realize this result. In emergencies, intubation with a long tube reaching nearly to the bifurcation may

relieve the little patient of all disturbances. Inhalation of oxygen, injections of camphorated oil and artificial respiration may also prove useful. Thymectomy, however, is a relatively simple operation and is indicated in all cases of intense and lasting compression. A number of successful cases are on record.

32. **Glioma at Base of Brain.**—The special feature of Halipré's case was that the functioning of the third pair was not interfered with by the large, soft, three-lobed glioma in the base of the brain, involving the internal capsule. The optic nerves embedded in the tumor were completely destroyed, but the right third nerve, although traversing the tumor, was apparently intact and no symptoms had been observed from it. The patient was a girl of 11; the first symptoms of the tumor had been observed four years before death. They consisted at first mainly in convulsions and hemiparesis, all improving under bromids.

Bulletin de l'Académie de Médecine, Paris

November 8, LXXIV, No. 35, pp. 239-260

33 *Mortality from Tuberculosis in France. A. Robin.
34 The Activity of the New Organic Arsenical Preparations. A. Gautier.

33. Summarized in Paris Letter, December 3, page 1994.

Lyon Médical, Lyons

October 16, CXV, No. 42, pp. 626-688

35 The Adams-Stokes Syndrome. L. Gallavardin.

October 22, No. 43, pp. 689-728

36 Salvarsan (Ehrlich's "606") in Syphilis. Coignet and A. Jambon.

October 30, No. 44, pp. 729-768

37 The Arterial Supply of the Thyroid. A. Latarjet and H. Alamartine.

November 6, No. 45, pp. 769-804

38 Tubercle Bacilli Not Found in Urine with Pulmonary Tuberculous Lesions Alone. Giuliani and Faysse.

November 13, No. 46, pp. 805-844

38 Measurements of Uterus in Diagnosis of Local Cancer. (Les renseignements fournis par l'hystéromètre dans le diagnostic du cancer du corps de l'utérus.) H. Violet.

Obstétrique, Paris

October, III, N. S., No. 10, pp. 769-888

40 *Spontaneous Delivery with Rachitic Contracted Pelvis. M. Marioton.

40. **Spontaneous Delivery with Contracted Pelvis.**—Marioton reviews the experiences in this line at the Clinique Tarnier at Paris, in charge of Bar, with 180 cases during the last two years, striving to determine the probabilities for delivery without assistance in the various grades of rachitic contracted pelvis. This anomaly seems to have grown less and less frequent during the last half century, not only at this clinic, but according to the reports from six other maternities of Paris. The maternal mortality was as low for the women with contracted pelvis—when delivery was spontaneously terminated—as for women with normal pelves. The mortality was only 0.6 per cent., while the general obstetric mortality is now estimated at 0.5 per cent. The statistics from various clinics and the management of the cases are tabulated for comparison. The data show that with a minimum conjugate diameter (*diamètre promonto-pubien minimum*, estimated by subtracting 1.5 cm. from the diagonal conjugate), of over 9 cm., delivery is spontaneously completed in 80 per cent. of all cases; below 8 cm. this rarely occurs—not in over 25 per cent. Between these limits of 8 and 9 cm. (3⅛ and 3⅝ inches) is the debatable ground. The dividing line seems to lie between 8.5 and 8.6 up to 8.9 cm. Below 8.5, assistance is generally necessary in more than 50 per cent. of the cases. The statistics cited show that spontaneous delivery occurs 10 to 11 per cent. more frequently in women who have already borne children. With pelves over 8.6 cm., the fetal mortality scarcely surpassed that with normal pelves, being about 9 per cent., while with pelves of less than 8 cm. fully 30 per cent. of the fetuses succumbed. The influence of preceding births did not seem to affect the fetal mortality, but infants weighing not much over 5 pounds died in a proportion ranging from 22.85 to 80 per cent., irrespective of the degree of contraction of the pelvis. With infants weighing from 5 to 6 pounds and a trifle over, the mortality was from 6 to 8 per cent., increasing to 20 per cent. with pelves between 8.1 and 8.5 cm. Under 5 and 6 pounds, with a conjugate diameter of 8 cm., the mortality is a little less than for the heavier children, but it amounted to 33 and 50 per cent. The data presented show that the fact of the contracted pelvis *in itself* does not render the prognosis for the mother any more serious.

Revue de Chirurgie, Paris

November 10, XXX, No. 11, pp. 945-1080

41 The Pain With Echinococcus Disease of the Liver. (Douleur dans les kystes hydatiques.) E. Quénu.
42 *Treatment of Surgical Tuberculosis of Bones and Joints. (Des progrès réalisés dans le traitement chirurgical des tuberculoses ostéoarticulaires.) P. Vignard and R. Armand.

42. **Treatment of Surgical Tuberculosis of Bones and Joints.**—Vignard and Armand conclude their long article, which is accompanied by thirty-one skiagraphs of some of the cases reported, with the statement that the natural tendency toward a cure of tuberculosis, especially in the joints in the young, imposes the necessity for prolonged immobilization as the best treatment in such cases. Local injections may be advisable as an adjuvant, especially in residual abscesses after healing over of the bone lesions. They have no action on the latter, as it is impossible for them to reach all parts of the lesion effectually, and the fluid injected has no effect on bone tissue, but in a synovial or abscess pocket they may do good service. Whenever a focus of tuberculous osteitis is accessible, it should be cleared out, and operative treatment is also indicated for a joint lesion if no turn for the better is apparent after five or ten months of immobilization. The operation should be concluded by plugging the cavity left in bone or joint with Mosetig filling. Everything must be done to avoid the necessity for drainage, at least for any length of time. Treatment on these principles is applicable only in cases in which there is no fistula and the kidneys are sound.

Revue de Médecine, Paris

November, XXX, No. 11, pp. 857-936

43 Experimental Bacillary Arthritis with Effusion. (Contribution à l'étude pathogénique des arthropathies bacillaires.) L. Landouzy, H. Gougerot and H. Salin.
44 *Central Nervous System of Children with Inherited Taints. II. (Le système nerveux central d'enfants issus de parents en état morbide.) G. Catola.

44. **Nervous System with Inherited Taints.**—The conception of an inherited predisposition to disease is sustained by the histologic findings in the central nervous system in eight children examined by Catola. The mothers had had tuberculosis, nephritis, pernicious anemia or syphilis, and the nerve tissue in the children showed imperfect or otherwise abnormal structure. The toxins seem to be able to induce hypoplasia or hyperplasia, affording an anatomic basis for the predisposition to disease in such families.

Semaine Médicale, Paris

November 23, XXX, No. 47, pp. 553-564

45 *Diffuse Calcification of Connective and Subcutaneous Tissue. (La calcinose généralisée et ses formes anatomiques interstitielle et sous-cutanée.) J. Lhermitte.

45. **Diffuse Calcification of Connective and Subcutaneous Tissue.**—Lhermitte calls attention to an anatomic-clinical syndrome characterized by infiltration with lime of the subcutaneous and connective tissue. This generalized calcinosis, as he calls it, is liable to affect both sexes, but is most frequent between the ages of 8 and 20. None of the specific infections seems to have anything to do with it, unless possibly syphilis. Krause and Trappe noticed marked improvement in their case under mercurial treatment, although there were no signs of syphilis and the Wassermann reaction was negative. Mercurial treatment was even more effectual in Stradiotti's case in which there was a history of untreated syphilis in youth; at the age of 44 a profusion of subcutaneous nodules containing lime subsided under mercurial treatment. The data reported seem to indicate further a close connection between this diffuse calcinosis and scleroderma. In a number of the cases on record there was irregular, pronounced enlargement of the thyroid. In many cases local trauma seemed to be responsible for the first development of the subcutaneous form of the affection. The interstitial or muscle-

tendon type is less frequent, but much more serious. The two forms have been observed together in some cases, and both are liable to be accompanied by vasomotor disturbances, sclerema, changes in the skin and pigmentation.

Berliner klinische Wochenschrift

October 31, XLVII, No. 44, pp. 2005-2044

46 Semicentennial of Berlin Medical Society. H. Senator.
47 Diagnosis of Nasal Diphtheria in Young Infants. Blochmann.
48 *Direct Determination of Free Acid in the Stomach. (Ein neues Verfahren zum direkten Nachweis der freien Säure im Magen.) E. Fuld.
49 Iodin Cachexia with Arteriosclerosis. M. Emmerich.
50 The Retrojugular Glands in Early Diagnosis of Experimental Tuberculosis. G. Kiralyfi.
51 Standards for Normal Heart Outlines in Radiography. M. L. Dorn.
52 Von Dungern's Modification of Wassermann Test. R. Frühwald and F. Weiler.
53 Technic for Vein Anesthesia. A. Schlesinger.
54 Biology of Tubercle Bacilli. H. Aronson.
55 *Roentgen Fluoroscopy Without Fluorescent Screen. (Röntgendurchleuchtung ohne Schirm.) A. Bauer.

November 7, No. 45, pp. 2045-2088

56 Salvarsan (Ehrlich's "606") in Nervous Diseases. Frenkel-Heiden.
57 The Muscle Findings in Cerebral and Spinal Muscular Atrophy. F. H. Lewy.
58 *Occurrence and Diagnostic Importance of Peptid-Splitting Enzyme in Stomach Content. L. Kuttner and G. Pulvermacher.
59 Morphologic Changes in Blood with Simple and Exophthalmic Goiter. U. Carpi.
60 Factors Involved in Production of Fever. (Zur Beleuchtung der Hyperthermie.) S. Widerøe.
61 Tuberculosis of Adult Knee-Joint. (Tuberkulose des erwachsenen Kniegelenks mit einer neuen Theorie und Operationsmethode.) L. W. Ely.
62 Acute Myeloid Leukemia with Green Bone Marrow. S. M. Zypkin. Commenced in No. 44.
63 Infanticide. (Der Kindesmord.) Marx.

48. **Test for Free Acid in Stomach Content.**—One hour after a test breakfast the patient drinks a swallow of an aqueous solution of sodium bicarbonate while the physician is auscultating him. The arrival of the fluid in the stomach can be readily heard and also, in a few minutes, the sounds of effervescence in case there is hydrochloric acid present in the stomach content. Fuld has not been able to find any effervescence auscultation test previously described in the literature. The effervescence can be detected also by Roentgen-ray examination, and if the patient is told to stand up there is generally an eructation. The only source of error liable is when there is gas already in the stomach from fermentation. This possibility should be excluded by auscultation before giving the soda. The method is so simple and easy that the test can be repeatedly applied without inconvenience to the patient. The amount of acid present can be approximately estimated by having the patient take another sip of the soda solution. If there is no further effervescence, the first sip must have neutralized all the free acid. With hyperacidity several sips are necessary to accomplish this. He estimates at 75 per cent. the proportion of cases of gastric cancer in which the secretion of hydrochloric acid has been arrested. Consequently the above simple means for determining the presence or absence of free acid in the stomach should be included, he declares, in every routine examination of a patient passing middle life, just as the urine is examined for albumin and sugar.

55. **Screenless Fluoroscopy.**—Bauer applies to the skin, instead of to the screen, the coating of fluorescent paint. This is done by drawing over the part a tricot cover coated with the platino-cyanid of barium. The result is surprising and fascinating, as the parts thus become luminous, free from the drawbacks of projection of the object on a plane surface. The chemical is applied to the inside of the tricot cuff or bandage, which is then drawn over or wound around the part to be examined. It then becomes actually transparent, so far as the soft parts are concerned, while the bones stand out in normal relief.

58. **Peptid-Splitting Ferment in Stomach Content.**—Kuttner and Pulvermacher state that the findings with the glycyltryptophan test (described in THE JOURNAL, Jan. 1, 1910, page 86) and their modification of it failed to confirm the assumption that the findings can be utilized in the diagnosis of stomach affections, especially of gastric cancer. However, the findings seem to throw light on the functioning of the pancreas, and the test may prove useful for this purpose.

Deutsches Archiv für klinische Medizin, Leipsic

C, Nos. 5-6, pp. 429-640. Last indexed Nov. 12, p. 1770

64 Orthodiagraphic Examination of the Heart in the Tuberculous. (Herzgrösse bei Tuberkulösen.) R. Beck.
65 Histology of the Intestine with Pernicious Anemia. V. Schlaepfer.
66 *Leukocyte Count in Different Parts of the Circulation at the Same Time. (Leukocytenzählung und Inhomogenität.) V. Ellermann and A. Erlandsen.
67 Infantile Splenic Anemia from Leishman's Bodies. (Kala-Azar?) R. Jemma.
68 *Chronic Intestinal Disease and Bone Disease. (Chronische Darmstörungen und Knochenerkrankung.) E. Koll.
69 *Parasitic Hemoptysis. L. Abend.
70 Action on Size of Heart of Experimental Anemia. H. Lüdke and L. Schüller.
71 Acute Leukemia with Paratyphoid B. Infection. F. Voswinkel and G. A. Dunzelt.
72 Albuminous Expectoration After Thoracocentesis. W. Beyer.
73 Experimental Production of Blood Picture Simulating Leukemia. H. Lüdke.
74 *Carbohydrate Metabolism. (Kohlehydratstoffwechsel. L. Wacker and F. Poly.
75 *Study of Fever. (Klinische und experimentelle Untersuchungen über Genese und Verlauf des Fiebers.) H. Lüdke and J. Sturm.
76 *Hemolytic Test for Gastric Cancer. III. E. Gräfe and W. Röhmer.
77 Alternating Pulse. J. Strasburger.
78 Induced Electric Phenomena in Human Body. (Induzierte elektrische Phänomene am menschlichen Körper und darauf beruhendes Tönen der Haut.) J. Müller.

66. Summarized in these columns, Sept. 24, 1910, page 1156.

68. **Chronic Intestinal Disease and Bone Disease.**—In the first of the four cases reported by Koll, intestinal disturbances had persisted for years, with fetid diarrhea at times. In each case the bones showed marked and progressive disturbances in development, softening or hyperplasia and abnormal development of the epiphyses. In two of the cases there does not seem to be any doubt that the bowel trouble was mainly responsible for the abnormal conditions in the bones; the cure of the latter as the bowel trouble was cured confirms this assumption. There is every probability that the same factor was responsible in the other two cases. The patients were women between 18 and 29 years old and one man of 73. The diarrhea began in early childhood in three of the cases and at the age of 24 in the other, and it had recurred at intervals during the years since, the features of the diarrhea indicating some affection of the small and upper large intestine. There was a suspicion of tuberculous infection as the cause of the intestinal trouble in each case, confirmed by necropsy in one, but the complete recovery in two other cases scarcely sustains this assumption. The bone anomalies suggested osteomalacia in one case, rachitis in two and acromegaly in the other. The facts observed suggest that bone affections of this kind should be regarded not so much from the standpoint of strict differential diagnosis, but should be considered as the local manifestations of some constitutional chemical process of intoxication.

69. **Parasitic Hemoptysis.**—The patient in Abend's case was a miller 44 years old, who had been living in the United States for twenty years, working on railroad construction and in mills, and coughing up blood occasionally during the last ten years. Each morning he spit up a little blood, but never at other times, and he had no dyspnea nor pain, but sometimes a sense of oppression and formication in the region of the left lower ribs, with occasional vertigo. Otherwise he felt well, and after thus expectorating blood for about twenty-four years, suddenly it ceased and the man has been well since. Abend found in the sputum the ova of some parasite, which he believes is the *Distomum pulmonale*, and the Roentgen rays show several small pinhead oval shadows in the center of the lung, similar to the miliary nodules which Miura found in some cases of supposed distomiasis. No fatal hemorrhage from this cause is on record.

74. **Carbohydrate Metabolism.**—Wacker and Poly report research on the normal sugar content of the human blood, sugar in various parts of the vascular regions in the dog and rabbit, hyperglycemia and the permeability of the kidneys for sugar, chemical regulation of body temperature, fever and action of antipyretics and the sugar content of the blood in pathologic conditions in 126 patients.

75. **Research on Fever.**—The findings in eighty cases of various acute infectious diseases are compared and certain

laws are seen to prevail indicating a close connection between the course of the fever and the bacterial content of the blood. These assumptions were confirmed by experiments on animals. It proved possible to prevent fatal collapse in animals after injection of bacterial toxins by keeping them extra warm just before and following the injections, thus preventing the reduction of temperature otherwise constant after the injections. Anything tending to induce hypersusceptibility may upset the temperature balance. Disturbances in the temperature regulation and formation of antibodies are signs of the altered reaction capacity of the organism, but the central nervous system is the chief point of attack for the toxins and endotoxins. When the nervous centers are intensely affected, phenomena of collapse follow, drop in temperature and blood-pressure, and inability to produce antibodies; when the nerve-centers are only moderately affected, the temperature rises and antibodies are produced unhindered.

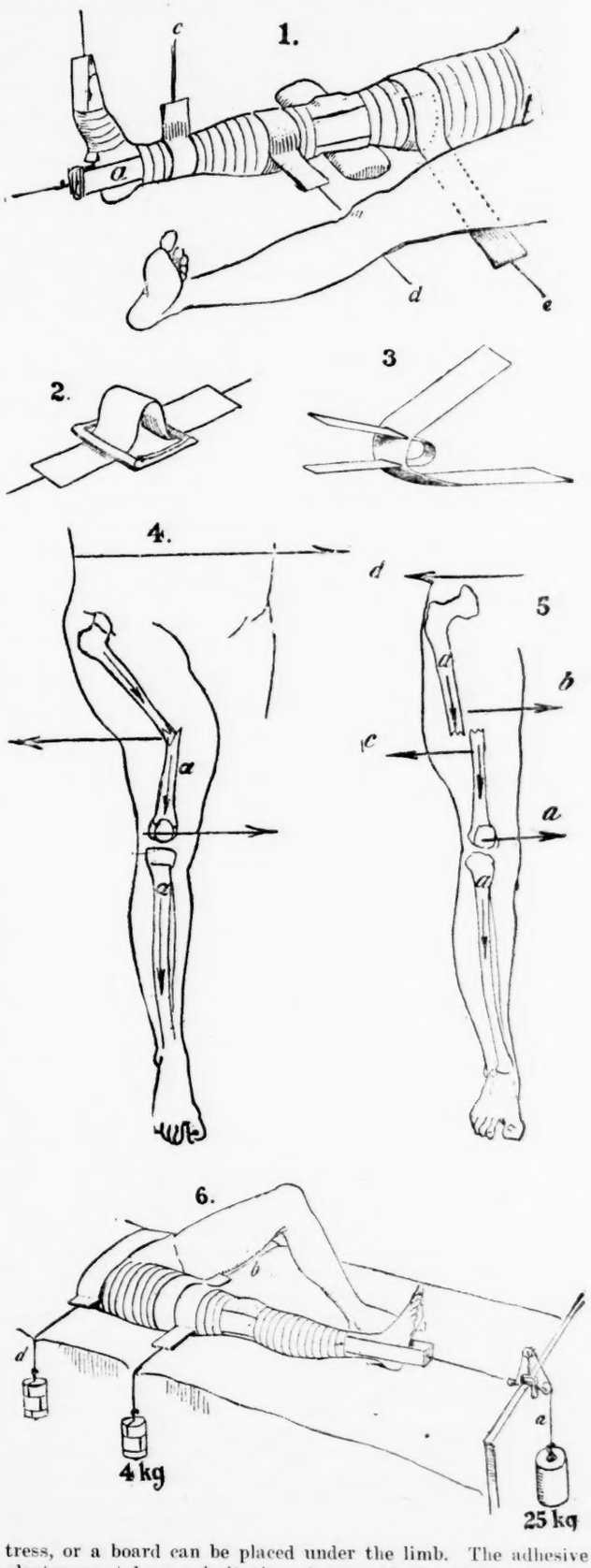
76. **Diagnosis of Gastric Cancer from Hemolysis by Stomach Content.**—Gräfe and Röhmer say that the presence of oleic acid in the stomach content, which is responsible for the hemolysis observed, is not specific for cancer, but it indicates something wrong, and in conjunction with other symptoms is proving a valuable aid in differentiation of malignant disease. A previous communication on the subject was summarized in THE JOURNAL, Oct. 29, 1910, page 1602.

Deutsche medizinische Wochenschrift, Berlin

November 17, XXXVI, No. 46, pp. 2129-2176

79 *Extension Treatment of Fractures. (Behandlung der Frakturen mit Streckverbänden.) B. Bardenheuer and R. Graessner.
80 *Convulsions After Orthopedic Operations. (Krampfanfälle nach orthopädischen Operationen.) A. Codivilla.
81 *Functional Tests of the Kidneys. (Bedeutung der funktionellen Nierenuntersuchung.) L. Casper.
82 Disadvantages of Endotin in Treatment of Tuberculosis. (Zur Behandlung der Tuberkulose mit eiweissfreien Tuberkulinpräparaten.) G. Jochmann and B. Möllers.
83 Cause of Dilatation of the Heart and High Blood-Pressure with Arteriosclerosis in the Aorta. (Zur Entstehung der Herzhypertrophie und Blutdrucksteigerung bei Aortensklerosen.) A. Bittorf.
84 Salvarsan (Ehrlich's "606") in Syphilis. J. Hecker.
85 Action of Salvarsan (Ehrlich's "606") on Spirochetes in Mouth. P. H. Gerber.
86 Dietetic Treatment of Diabetes. (Ernährungstherapie des Diabetes mellitus.) G. Graul.

79. **Extension in Treatment of Fractures.**—Bardenheuer presents here the conclusions of his years of pioneer work in this line, describing the technic for continuous elastic traction in various directions, which he regards as the best means to restore normal functioning to fractured limbs. The contraction of the muscles is often the chief hindrance to reduction of the fracture, and consequently, he says, extension should be applied as early as possible after the fracture, and it should be strong enough to overcome the elastic inflammatory retraction of the muscles. As the muscles act not only lengthwise of the limb, but also concentrically, traction must be exerted from the sides as well as from the end of the limb, and be adapted to counteract any tendency to rotation. By exact apposition of the stumps the tendency to production of callus is reduced to the minimum, which is extremely important for the future functioning of the limb; the aim should be to reduce the healing of the stumps to a linear scar, just as in the healing of a skin wound. Healing by primary intention of a skin wound is always the shorter process, and it is the same with healing of the fracture. Forcible reduction is rendered unnecessary with the extension technic, as this gradually brings the stumps into their normal position, unless the displacement is extreme. When it has to be done he gives ether. A good functional result can be anticipated only when the elasticity of the muscles and of all the tissues is maintained unimpaired. They lose their elasticity more and more the longer they are inactive, and most so when there is concomitant inflammation. By the elastic traction of his extension technic the retracted muscles are stretched while the stumps having been restored to normal position, there is no further irritation from them on the soft parts and resulting inflammation is prevented, checked or its consequences attenuated. He commences active motion with a fractured wrist as early as the fourth day, the fifth with fractured ankle, the third week with fractured knee, exercising the joint for half an hour twice a day. The excursions should be merely what can be done without pain. The weights are removed when the limb is being exercised. The patient lies on a hair mattress, or a board can be placed under the limb. The adhesive plaster must be non-irritating, 6 cm. wide for the lengthwise strips and half this width wound around the limb. The front of the tibia and the malleoli are protected by folded gauze;



cotton becomes lumpy. The extension is applied to the region of the stumps with counterextension for the farther end of the bone, as in Figure 4. He advocates extension on these principles for all simple fractures of the extremities; for dislocations after reduction, as the Roentgen rays show that dislocations are almost always accompanied by more or less splitting off of bone or lacerations, and also for all compound fractures of the extremities if the skin has been merely pierced by the bone, or if the soft parts are not seriously injured and there is reason to assume absence of infection. He disapproves of plaster casts in all cases of fracture, except when needed for transportation of the patient, especially in war; for the delirious, to prevent self-injury; for exceptional circumstances in which a walking apparatus is required; for after-treatment of fractured bones that have been surgically united—in both these last classes the plaster cast must be made removable to permit exercise of the limb—and, lastly, for compound fractures when the size, location, extent and nature of the injury may require immobilization in a solid cast.

Figure 1 shows the extension for fracture of the leg not far below the knee; Figure 2 shows the device by which downward traction can be applied from each side; Figure 3 the plaster crossed to pull split-off parts of bone into apposition. Figure 4 shows the direction of traction, and Figure 6 shows the same in application, while Figure 5 calls for traction in different directions. He uses a spring extension apparatus for fracture of the arm. The traction applied to the waist is to keep the patient from moving around.

80. **Convulsions After Orthopedic Operations.**—Codivilla has encountered nine cases of this kind, Schanz ten, and Hoffa, Drehmann and others have reported some fatal cases. The convulsions are a severe complication of the operation, and Codivilla thinks that there can be no doubt that they are the result of traction on the nerve terminals by the extension applied to complete the operative correction of the deformity in question. The excessive traction on the soft parts and nerves of the hips affects by reflex action the central nervous system, entailing a condition which leads to the outbreak of actual epileptic convulsions. Neri has confirmed by experiments on animals the correctness of this view of the traction on the nerves in the region as the cause for the convulsions, especially the continuous traction on the sciatic nerve. Children and adults with a predisposition to nervous disturbances are particularly liable to be affected. The main point in treatment of the attack or in prevention is to relieve the traction on the soft parts, either by loosening the extension or by placing the hip in a position to prevent the excessive traction on the soft parts. He advises a preliminary course of bromid for epileptics and all persons inclined to be unusually nervous, and, when the soft parts have to be stretched, to do this very cautiously and gradually. In his cases the convulsions did not develop until several days after the operation; they were usually preceded by prodromal manifestations: more or less headache, the patient is particularly restless at night and unable to sleep, with occasional painful spasms in the limb. Children do not cry but moan almost uninterruptedly, while older patients keep sighing and complain of distress, and there may be a tendency to delirium, especially at night. The pulse is slow and tense, the pupils mydriatic, the light reaction sluggish and incomplete, and the pupils may be unequal. The patients may complain of abdominal pain and difficulty in urinating. This prodromal stage may last for hours or days and may subside without development of actual convulsions. The convulsions generally begin mild and brief, but grow gradually worse until the spasms are practically continuous. During the pauses the patient may regain consciousness, but generally there is more or less apathy or stupor. The convulsions resemble an epileptic seizure in every particular, he states. Schanz ascribes them to fat embolism, but there are numerous arguments against this view.

81. **Tests of Kidney Functioning.**—In this postgraduate lecture Casper lauds the great advances made in functional tests of the kidneys which have revolutionized the prognosis of nephrectomy. He adds that the tests are also proving of great value in determining the indications for prostatectomy, as the chances for a successful outcome are better the sounder the kidneys.

Medizinische Klinik, Berlin

November 20, VI, No. 47, pp. 1845-1884

87 *Menus for Dietetic Treatment in Health Resorts. (Diät in Kurorten und Anstalten.) W. Schlesinger.
88 Focal Reaction and Hypersusceptibility in Tuberculin Treatment of Pulmonary Tuberculosis. (Herdreaktion und Ueberempfindlichkeit bei der Tuberkulinbehandlung der Lungentuberkulose.) J. W. Samson.
89 Treatment of Eczema in Infants. Galewsky.

87. **Special Diets at Health Resorts and in Institutions.**—Schlesinger commends the introduction at Homburg and some other watering places of special menus for certain classes of visitors in search of health, saying that these special diets represent a great advance. But he thinks that the menus provided might be improved on, and he suggests menus for four diets graduated to the digestive capacity of the individual rather than to the special organ which may be diseased. The menus outlined are comprehensive enough for ample individualization for indications and tastes. Diet 1 is a fluid diet for the very sick. Diet 2 is designed to spare the stomach all extra work; all the articles are passed through a sieve or very finely chopped, and extensive use is made of beaten whites of eggs which serve the useful purpose of keeping the particles of the food apart and rendering them still more porous as the dish is cooked. Meat is allowed only at noon. Diet 3 is mainly a milk and vegetable diet, free from meat and extractives, and Diet 4 is for diabetics, excluding sugar and flour. All the menus are arranged for three meals a day, plus two light lunches.

Monatsschrift für Kinderheilkunde, Leipsic

IX, Nos. 5-6, pp. 255-342. Last indexed Oct. 4, p. 1238

90 *Blood-Pressure in Children. (Blutdruck im Kindesalter.) W. Kaupe.
91 *Salt Fever. (Zur Theorie des Salzfiebers.) P. Heim and K. John.
92 Food Requirements of Prematurely Born Children. (Zur Physiologie des neugeborenen Kindes. I.) W. Berk.
93 Carbohydrates in Infant Feeding. (Rolle der Kohlehydrate bei der Ernährung des Säuglings.) L. Langstein.
94 Protest Against Permitting the Exhibiting of Infants in Incubators. (Ein Zeichen der Zeit.) A. Czerny.

90. **Blood-Pressure in Children.**—Kaupe's findings parallel those of Seiler and Kriss already mentioned in THE JOURNAL, Sept. 3, 1910, page 893.

91. **Salt Fever.**—It seems evident from the research reported that "salt fever" is the result of heat congestion in the interior as the water normally eliminated in perspiration is drawn away from the skin by the influence of the salt. Drinking water restores the proper balance. The fever with the retained water is only an indirect result—the salt in itself not raising the temperature.

Münchener medizinische Wochenschrift

November 15, LVII, No. 46, pp. 2393-2448

95 Immunization of Animals Against Tuberculosis. Ruppel.
96 *Arthropods in Transmission of Disease. (Arthropoden als Krankheitsüberträger.) R. Müller.
97 Salvarsan (Ehrlich's "606") in Syphilis of the Nervous System. G. Treupel.
98 Idem. H. Willige.
99 Unfavorable Experiences with Trypsin in Surgical Tuberculosis. P. Sohler.
100 Staining Technic for Determination of Certain Organic Oxidizing Substances. (Ueber den farbchemischen Nachweis einiger oxydierender Substanzen des Körpers.) W. Loele.
101 *Experiences with Spinal Anesthesia. (Anwendung der Lumbalanästhesie in der Universitäts-Frauenklinik in Leipzig.) E. Zweifel.
102 Skiagraphs of Flat-Foot. (Der Plattfuss im Röntgenbilde.) G. Muskat.
103 Chart for Calories in Infant Feeding. (Zur kalorimetrischen Bewertung der Säuglingsnährung.) H. v. Mettenheimer.
104 Diphtheria Antitoxin in Treatment of Hemophilia. Two Cases. H. Krauss.
105 Multiple Osteomas of the Trachea. S. Levinger.
106 Typhoid at Augsburg. (Vorkommen von Unterleibstyphus in der Stadt Augsburg.) F. Böhm.

96. **Transmission of Disease by Insects, Etc.**—Müller gives a nearly two-column list of arthropods, insects, spiders, etc., important from a medical point of view as transmitters of disease, and discusses what has been learned on the subject to date.

101. **Spinal Anesthesia.**—Zweifel states that the spinal technic has been applied in 1,500 cases at Leipsic without a fatality. It is generally combined with the preliminary scopolamin-morphin technic, and this is all that the patients remember of the operation, asking as they rouse, hours after the operation, when it is going to begin. The only by-effects of consequence were headache and pain in the back of the neck in about 5 or 6 per cent. of the patients. The headache persisted on an average for two days; it was aggravated in some cases by the slightest movement of the head. One patient still had headache when dismissed from the hospital six weeks after the operation. Headache developed in 8 per cent. of the eighty-eight vaginal operations, and only in 2 per cent. of the 231 abdominal operations. In a case of herniotomy and one of the Alexander-Adams operation, the cerebrospinal fluid spurted in a strong jet, and both these patients suffered from constant vomiting and intense headache for one or two days, the pain persisting in one case for two weeks. The disturbances in these cases were evidently the result of the changes in the pressure in the fluid, and the technic should not permit such fluctuations in the pressure.

Therapeutische Monatshefte, Berlin

November, XXIV, No. 11, pp. 593-668

107 History of and Experiences with Arsacetin. Heinrich.
108 Pyocyanase in Treatment of Soft Chancre. A. Hatzfeld.
109 *Gymnastic Treatment of Abdominal Ptosis or Constipation. (Zur Therapie der asthenischen Zustände der Unterleibsorgane.) J. Oldevig.
110 *Danger of Castor Oil in Phosphorus Poisoning. (Unbrauchbarkeit des Rizinusöls als Abführmittel bei Phosphorvergiftung.) M. Rothmann.
111 Transplantation of the Biceps Femoris. (Verpflanzung des Musculus biceps femoris zur Hebung pathologischer Aussenrotation des Oberschenkels bei spinaler Kinderlähmung.) A. Hildebrandt.

109. **Exercises in Treatment of Asthenic Conditions in the Abdomen.**—Oldevig emphasizes the necessity for toning up the muscles as the best means for restoring normal conditions in case of ptosis of the viscera, constipation or other abdominal disturbances in which weakness of the abdominal muscles can be a factor. Exercise is the only way to strengthen the muscles, and if the muscle can be exercised singly, the greater the effect. By exercising the muscles which are under control of the will, we are able to influence the organs which are beyond this control. The special exercise which he has found most effectual in cases of ptosis, tendency to hernia and constipation, is with the patient reclining, his arms at his side and one foot laid over the other. He then lifts his pelvis as high as possible, and while he is doing this an attendant opposes resistance to this raising of the pelvis; seated on the long, low bench beside the patient he places his hands on the crests of the ilium and presses downward as the patient lifts the pelvis. When the pelvis is raised as high as the patient can bring it against the resistance of the attendant, then the attendant presses it back down on the table, the patient striving to resist this downward movement. The patient breathes deeply before he commences the exercise, and it is done during slow expiration, although it may take a little practice to do this at first. After the exercise has been done three or four times the patient rests. The exercise has a tendency to increase the heart action and the supply of the blood to the head. When the exercise is correctly done the isolated group of muscles being exercised feel as if a firm, funnel-shaped bandage were wound around the entire pelvis from the perineum to the lower part of the thorax.

110. **Extra Solubility of Phosphorus in Castor Oil.**—The research reported confirms the dangers of giving castor oil in case of acute phosphorus poisoning, as the phosphorus is thus rendered more soluble and larger amounts are absorbed. The same applies also probably to other drugs soluble in oil, nitrobenzol, santonin, cantharidin, etc.

Therapie der Gegenwart, Berlin

November, LI, No. 11, pp. 481-528

112 *Digitalis. E. v. Leyden.
113 *Prognosis of Exophthalmic Goiter. (Prognose der Basedowschen Krankheit.) L. Syllaba.
114 *Treatment of Obesity. (Neue Gesichtspunkte für Entfettungskuren mittels diätetischer Küche.) W. Sternberg.
115 *Principles in the Treatment of Hernia. F. Karewski.

112. **Digitalis.**—This is a lecture delivered by von Leyden eleven years ago, but not previously published. He urges to refrain from giving digitalis unless there is urgent need for it, and not to give it too early. It seems to be established that digitalis acts only on the left ventricle; when the right ventricle is weak digitalis acts injuriously rather than usefully, possibly increasing the dyspnea. Consequently he regards this drug as contra-indicated with mitral stenosis, with emphysema and kyphoscoliosis. If it works under these conditions it is only on account of the secondary weakness of the left ventricle. He assumes that digitalis acts only on the musculature of the heart, and consequently will have little action if a large part of the muscle is degenerated. With chronic myocarditis it frequently fails completely. Even with valvular defects, its lack of action may be explained by the isolated myocarditic foci accompanying the endocarditic process. He regards the action of digitalis as uncertain and dubious when there is fever, preferring to give 5 or 8 drops twice a day of tincture of strophanthus.

113. **Prognosis of Exophthalmic Goiter.**—Syllaba makes an important contribution to this subject by his study of fifty-one cases in which the history of the patients has been followed for several years, the series commencing with 1895. Treatment was exclusively medical with two exceptions, and the ultimate outcome is 19.6 per cent. improved and 33.3 cured, that is, favorable in 52.9 per cent. He reviews the experiences of others with non-operative treatment, all confirming his experience that over half of the patients with exophthalmic goiter can be permanently improved and that one-third are completely cured, or at most left with a little exophthalmos. In his seventeen cases of complete cures there were four or five in which the exophthalmic goiter was comparatively mild, but in the others the syndrome was very severe. In the two cases in which an adjuvant operation was performed there was recurrence after two years in one case and the other patient died five months afterward from asystolia; she had been left with postoperative tetany and recurrent paralysis, in addition to her previous disturbances. In the various cases treatment had been manifold and various: any medical measure may cure and all may fail. One patient is improved by one method, another may be uninfluenced by the whole arsenal. In three cases the symptoms flared up under iodin treatment, in one given internally and in the others after prolonged local applications. This experience and that of others confirm the fact that iodin seems to be a poison for patients with exophthalmic goiter. He urges the necessity for careful study of every case of exophthalmic goiter under medical treatment and perpetually thereafter, not losing sight of these patients. Only by systematic series of protracted observations will it be possible to form a correct judgment in regard to the comparative merits of operative and medical measures. There is nothing on record to date giving long enough study of the medical cases for anything like a just appreciation. He begs that practitioners and institutions will keep a register of all patients with exophthalmic goiter and supervise the condition at regular intervals thereafter, even when all is apparently well with them.

114. **Treatment of Obesity.**—Sternberg's suggestions for improving the traditional routine in the matter of diet have been frequently mentioned in these columns. He here asserts that the subjective phase of dietetics has been neglected altogether too much in the past. It deserves special attention in the dietetic treatment of obesity, particularly measures to reduce the appetite. It is a familiar fact that candy and other sweets taken between meals or just before a meal spoil the appetite for everything except more sweets. Coffee has also a pronounced effect in reducing the appetite, making the individual feel that he has eaten sufficiently. Tradition utilizes these properties by permitting sweets and coffee only at the end of a hearty meal, but in the obese this practice should be reversed. The sweets and the coffee should be taken first, and they will enable the individual to feel satisfied with a much smaller meal than otherwise his appetite would call for. He suggests that mannite is particularly useful for the sweets in cases of obesity, as it has a laxative action. He quotes Pliny to show that the action of sweets in reducing

the craving for food was known in ancient times, licorice being recommended to relieve hunger and thirst. This, Sternberg says, is the more important, as sugar was not known to Pliny, and honey and licorice were about the only sweets known. Alcohol seems to have the opposite effect to coffee and sweets in this respect, as it stimulates the appetite. Drugs to deaden the sensibility of the tongue also have an inhibiting action on the appetite. He questioned the employees in chocolate factories and found that all were unanimous in saying that if they nibbled or tasted chocolate not long before dinner they spoiled their appetite for the meal. The data cited are useful hints in treatment of the obese, as also from the opposite standpoint for individuals whose appetite needs fostering.

115. **Principles in the Treatment of Hernia.**—Karewski discusses the general principles and the special indications, emphasizing in particular the importance of examining all the points where hernia is possible in every case of violent abdominal pain, vomiting and tympanites for which no other cause is apparent, as an unsuspected hernia may be the cause of the mischief, not forgetting the obturator foramen and the sacrosciatic notch.

Zentralblatt für Gynäkologie, Leipsic

November 19, XXXIV, No. 47, pp. 1529-1552

116 Carcinoma of the Stump of the Cervix Five Years After Supravaginal Amputation of the Myomatous Uterus. (Karzinom des Cervixstumpfes nach der Chrobak'schen Myomoperation.) F. Weisse.
117 Successful Decapsulation of the Kidney in Eclampsia Continuing After Delivery. (Nierenenthülsung wegen Eklampsie.) H. Bollenhagen.
118 *Advantages of Atropin in Treatment of Dysmenorrhea. R. Drenkhahn.
119 Non-Sensibility of Internal Genital Organs. P. Bröse.

118. **Atropin in Treatment of Dysmenorrhea.**—Drenkhahn reports a number of cases of dysmenorrhea in which injection into the cervical canal of 1 mg. atropin dissolved in 1 c.c. water arrested at once the colic spasms in the uterus or prevented their development. If there is no speculum or syringe at hand, the same effect can be realized by introducing a small cotton wad, moistened with a 1 per cent. solution of atropin and pressed far back against the posterior vault of the vagina. This simple measure has proved effectual in his experience of fifteen years. Its efficacy is explained by Schindler's experimental research on ninety-three animals, showing how atropin paralyzes the automatic action of the uterus and its mechanical excitability. Drenkhahn's experience has shown that even a single application of the atropin may cure a chronic tendency to dysmenorrhea when there are no morbid changes in the genital organs. He adds that mild acute and chronic inflammatory conditions in the uterus may yield promptly to sitz baths or other measures when the uterus is under the influence of atropin, when otherwise the affections are refractory to all treatment. He wonders that more attention is not paid to atropin as a means of enforcing rest for the uterus in morbid conditions, and states that his communication is for the purpose of rescuing atropin from the neglect into which it seems to have fallen in respect to the treatment of painful affections of the uterus.

Riforma Medica, Naples

November 7, XXV, No. 45, pp. 1233-1260

120 Clinical Forms of Gastric Ulcer. G. Rummo.
121 Action of Caffein on the Kidneys. (L'azione sui reni della caffeina ad uso protratto.) A. Tomaselli.
122 Polycystic Kidneys. (Contributo allo studio isto-patogenetico del rene policistico.) L. Ferrannini.

Hospitalstidende, Copenhagen

October 26, LIII, No. 43, pp. 1201-1224

123 *Hypophysis Disease. (Bidrag till Hypophyselidelsernes operative Behandling.) E. Schmiegelow. Commenced in No. 42.

123. **Operative Treatment of Hypophysis Tumors.**—Schmiegelow summarizes the literature to date on the transnasal removal of hypophysis tumors, including West's contribution to the subject and thirteen cases that have been reported by Eiselsberg, Hochenegg, Kocher and others. He then reports a case from his own experience; the patient was a woman of 27, healthy until puberty, when acromegaly developed. At the age of 23 she began to have headache, gradually becoming accompanied by complete atrophy of the right optic nerve. Trouble was beginning in the left eye, when the cystic tumor in the hypophysis was successfully removed by the transnasal route. The headache ceased at once and vision in the left eye returned to normal. All was proceeding favorably until three weeks after the operation, when acute edema of the brain developed, proving rapidly fatal. Kocher has had a similar experience, his patient, a woman of 30, dying suddenly four weeks after the operation, and Schloffer also lost a patient from this cause nearly three months after the successful operation. The pressure of the tumor on the veins in the base of the brain had evidently compromised the circulation in the region and in the brain generally. In Schmiegelow's case and in a number on record the temperature ran up very high as the acute edema developed in the brain and a fulminating meningitis was suspected, but the meninges were found comparatively intact. The rise in temperature is probably the result of irritation of the thalamus from the mechanical compression. His patient died too soon for any marked influence on the acromegaly to be apparent, but during the last week she had commented on the improvement in her hands. In conclusion, Schmiegelow calls attention to the invaluable service rendered by peroral intubation during the hour-and-a-half-long operation. The tube was introduced after the patient was under the influence of ether. The anesthesia was then continued with chloroform. The intubation permitted the throat around the tube and the mouth to be packed with sponges, while respiration proceeded regularly and amply, there was no tendency to cough or vomit, and the hemorrhage was minimal.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

PRELIMINARY REPORT ON THE KILLING OF RATS AND RAT FLEAS BY HYDROCYANIC ACID GAS. By Capt. W. D. H. Stevenson, M.B. (Bombay Bacteriologic Laboratory). Scientific Memoirs, by Officers of the Medical and Sanitary Departments of the Government of India, New Series No. 38. Issued Under the Authority of the Government of India by the Sanitary Commissioner with the Government of India. Boards. Price, 8 annas. Pp. 28. Calcutta: Superintendent Government Printing, India, 1910.

THE RACIAL ANATOMY OF THE PHILIPPINE ISLANDERS. Introducing New Methods of Anthropology and Showing Their Application to the Filipinos, with a Classification of Human Ears and a Scheme for the Heredity of Anatomical Characters in Man. By Robert Bennett Bean, M.D., Associate Professor of Anatomy, Tulane University of Louisiana, New Orleans. Cloth. Price, $2 net. Pp. 236, with 26 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

AMERICAN RED CROSS ABRIDGED TEXT-BOOK ON FIRST AID. General Edition. A Manual of Instruction. By Major Charles Lynch, Medical Corps, United States Army. Prepared for and Endorsed by the American Red Cross. Paper. Price, 30 cents. Pp. 183, with 55 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

THE DISEASES OF CHINA, INCLUDING FORMOSA AND KOREA. By W. Hamilton Jefferys, M.D., Univ. of Pennsylvania, Medical Missionary in China, and James L. Maxwell, M.D., London, Medical Missionary in Formosa. Cloth. Price, $6 net. Pp. 716, with 360 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

ANNUAL REPORT OF THE SURGEON-GENERAL, U. S. NAVY, CHIEF OF THE BUREAU OF MEDICINE AND SURGERY, TO THE SECRETARY OF THE NAVY. For the Fiscal Year 1910. Navy Department, Bureau of Medicine and Surgery. Paper. Pp. 179. Washington: Government Printing Office, 1910.

LESSONS ON THE EYE. For the Use of Undergraduate Students. By Frank L. Henderson, M.D., ex-President of the St. Louis Medical Society (1905). Fourth Edition. Cloth. Price, $1.50 net. Pp. 238, with 138 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

FIRST NATIONAL CONFERENCE ON INDUSTRIAL DISEASES [PROCEEDINGS], Chicago, June 10, 1910. Publication No. 10, American Association for Labor Legislation. Paper. Pp. 52. New York: American Association for Labor Legislation, 1 Madison Ave., 1910.

THE NON-SURGICAL TREATMENT OF DUODENAL ULCER. By George Herschell, M.D., London, Lately Senior Physician to the Kensington General Hospital. Paper. Price, 1 shilling. Pp. 39. London: Henry J. Glaisher, 55 Wigmore Street, W., 1910.

ABSTRACT OF PROCEEDINGS, UNITED STATES PHARMACOPEIAL CONVENTION, 1910. Compiled and Edited by the Secretary of the Convention. Paper. Pp. 110. H. M. Whelpley, M.D., Secretary, 2342 Albion Place, St. Louis.

THE PROBLEM OF RACE BETTERMENT. By J. Ewing Mears, M.D. Cloth. Price, 50 cents. Pp. 45. Philadelphia: William J. Dornan, 1910.